Inside

Which university do EMPLOYERS rate most highly? Which polytechnic? And do these results, based on a *Sunday Times* poll, agree with *The THES*'s own poll on "best departments"? (page 11)

Blight on the groves of academe? In the third of our series on UNIVERSITY ARCHITECTURE, Hal Moggridge looks at some of the technical triumphs and disasters of recent building (page 13)

"BRAIN DRAIN" has almost a nostalgic sound these days, but an old problem is back on the political and educational agenda. David Parsons looks at why Britain's young scientists are leaving (page 14)

ARTS: Lynne Truss meets playwright Trevor Griffiths . . . prizewinning student critic Katharine Way reports on the National Student Drama Festival . . . Sally Festing considers sculpture for the garden (page 15)

GENOCIDE has haunted modern history and law, a crime that, by virtue of its enormity, seems to escape all the normal social categories. In the year that saw eventual ratification of a UN convention on the subject, Wesley Gryk reviews Leo Kuper's discussion of the prevention of genocide (page 16)

Home news	1–7
Patrick Nuttgens	2
Letters to the editor	2
Don's Diary (Michael W. Eysenck)	4
Antithesis	5
Union View (AUT)	6
Overseas news	8–9
Articles	10–14
Column (Ernest Boyer)	14
Arts	15
Books	16–23
American studies books	20–23
Noticeboard	24
Classified advertising	25–32

NEXT WEEK

Economics books
Peter Kneen on Gorbachev
Scrutiny: part two
After Chernobyl: what?

TIMES PAST — THE TIMES

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Erosion and efficiency

One argument on which the Department of Education and Science has rather desperately relied to dispute the National Advisory Body's conclusion that the student intake to polytechnics and colleges next year must be cut by 9,500 to protect the unit of resource is that the NAB calculation takes no account of the greater productivity promised by the National Association of Teachers in Further and Higher Education in last year's salary settlement.

The DES argues that Natfhe members were awarded a generous increase because their association had agreed to negotiate new working conditions with the local authorities and that these negotiations should lead to greater efficiency which in turn would allow polytechnics and colleges to admit more students without threatening academic quality. The DES's clear insinuation is that Natfhe or the local authorities, or both, are dragging their feet in these negotiations. Therefore it is their fault, not the DES's, if students are turned away from polytechnics and colleges.

This is a disingenuous argument. First, it misrepresents the details of the Natfhe settlement. Lecturers in advanced as opposed to non-advanced further education did not receive an exceptional salary increase, as the maverick Association of Polytechnic Teachers has been at laboured pains to point out. The explanation is simple: the extra money was used to merge the lecturer I and lecturer II salary scales, a manoeuvre which was virtually irrelevant to polytechnics and colleges of higher education.

Second, of course, by adopting this line the DES is arguing for a further erosion of the unit of resource although it seems unaware of this embarrassment. For that is what greater efficiency would amount to under these conditions: fewer lecturers teaching more students. The negotiations between Natfhe and the local authorities are concerned almost entirely with non-advanced further education. The scope for improved teacher efficiency in public sector higher education is probably very small. After all the level of teaching costs in the universities suggests that the polytechnics and colleges are already operating at a high level of efficiency.

The question which has troubled the NAB for almost three years will not go away. Is there further scope for cutting unit costs without endangering academic standards? Many polytechnic directors feel that the NAB has been irresponsible in allowing unit costs to fall so far and so fast (although their polytechnics have been eager to recruit the extra students). After much heart-searching the NAB board and committee have decided that enough is enough and that unit costs must not be allowed to fall further. The DES has been deeply implicated in these difficult discussions. Yet ministers are now behaving as if these discussions had never taken place, and the question that has dominated policy making for public sector higher education for the last three years was a minor problem that could be fudged and hectored away.

Third, it is unfair to accuse either Natfhe or the local authorities of dragging their feet. Of course Natfhe is trying to get the best possible deal for its members. It is inevitable that a trade union will proceed cautiously in treacherous negotiations like these, where it can be accused of selling long-term gains in working conditions for short-term advantages in salaries. But it is also in the interest of employers that any new conditions of service are regarded by Natfhe members in a positive rather than punitive light. Efficiency does not always need to be gained at the expense of trade unions; the best and most solid kind is won with their support.

Of course the local authorities are having difficulty in formulating their demands in a detailed form capable of sensible implementation. But their difficulty simply measures the wide gap between the rhetoric of efficiency, which is sufficient for Sir Keith Joseph and his ministerial colleagues, and the practice of efficiency, with which the local authorities now have to grapple. So it is inevitably a complex negotiation for both Natfhe and the local authorities. Quick and spectacular results cannot reasonably be expected.

The picture conjured up by DES complaints, of Natfhe with a rule book as thick as your arm and leftish or at any rate wettish local authorities complacently succumbing to union pressure, is utterly misleading. The true picture is of a further education system that is adaptable, innovatory and efficient. In non-advanced further education the new challenge of working with the Manpower Services Commission is being met alongside the continuing challenge of meeting industrial, business and community needs. The extended college year is evidence of Natfhe's commitment. In advanced further education almost a fifth more students are being taught in polytechnics and colleges of higher education than in 1981 by the same number of lecturers, a gain in productivity unequalled in the rest of the education system.

The commitment of the institutions themselves, the local authorities, and Natfhe to access and innovation in public sector higher education cannot be denied. Certainly the record of further education entitles it to more than bad-mouthing by the DES.

Donnish reproduction

The university teaching profession is not being reproduced. That is the simplest and most disturbing conclusion to be drawn from the report of the management consultants, PA Personnel Services, commissioned by the vice chancellors and the Association of University Teachers and published last week. Indeed an even more sombre conclusion is possible, that the essential conditions which allow the healthy reproduction of a vital academic profession hardly exist in Britain in the 1980s.

The brightest and the best have no desire to become university teachers, arguably because the status of the profession has so sharply declined and actually because insufficient opportunities exist to build a worthwhile career. As a result the elaborate structure of postgraduate courses, doctorates, and postdoctoral work, the essential preludes to an academic career certainly in science, is close to collapse. This has immediate implications for the vitality of university research and longer-term implications for the health of the academic profession. The present members of that profession are growing older. Any decline in their intellectual vitality and individual commitment is not being compensated for by the recruitment of younger and more enthusiastic university teachers. The implications of a declining academic profession for Britain's universities are painfully plain.

Pay is an important part of, but not the whole, story. Even before the PA Personnel Services report there could be little doubt about the difficulty of recruiting and retaining university teachers in many important subjects. What this report demonstrates is that this is a general rather than exceptional problem. Information technology may have provided the most glaring gap between university and "market" salaries. But all university salaries have fallen well behind those of comparable groups, most especially in private industry but even among unfavoured people like civil servants.

Two conclusions seem inescapable. The first is that a general upward revision of university salaries is now urgent. Slogans such as "Rectify the Anomaly", which was adopted by the AUT in the late 1970s, can easily be lampooned. Yet the salaries of university teachers are now anomalously low. No amount of talk about the need for differential salaries or tinkering with new structures for the academic profession can conceal that difficult and expensive fact. In the past the vice chancellors may have been too ready to snuggle up to ministers and to keep the AUT at arm's length. Perhaps now they should abandon their fastidious caution and join with the AUT in a united campaign to win more satisfactory salaries for university teachers.

The second is that we need to worry as much, maybe more, about the shape of the university teaching profession in the year 2000 as about next year's bill for academic salaries. The principal asset possessed by universities is the quality of their teachers. That asset cannot be dissipated, either to protect the jobs of existing university teachers or to allow universities to navigate the financial storms ahead or to permit the Government to cut public expenditure on universities. All three are important causes, the first for the AUT, the second for the vice chancellors as guardians of institutional integrity, and the last for the present Government. But they need to be transcended by a view that is both broader and longer. The present report indicates the inevitable result of myopic drift.

In defence of lists

In its present jittery mood higher education is unhappy about lists, especially lists that seek to rank universities and polytechnics in relative order of merit. So there will be an instinctive scepticism about the value of the lists produced by *The Sunday Times*' poll of employers of graduates and apprehension about its eventual use (page 11). The scepticism may be justified, although far more authoritative lists are compiled from far more anecdotal evidence. But the apprehension is not. The lists to fear are those which are kept secret not those which are exposed to public criticism.

The present poll is valuable in two senses. First it exposes employers' perceptions of the most successful higher education institutions. Oxbridge inevitably is on top, followed by the old civics of the North and Midlands and the ancient Scottish universities. But then an interesting inversion has taken place in the pecking order. Ten years ago the new universities were in the ascendant; today it is the technological universities which are favoured. The gap in esteem between universities and polytechnics also seems to be much narrower in the industrial than in the academic mind. This qualifies the conclusion reached by recent Brunel research on the expectation of employers that they are a polytechnic as markedly inferior.

Second employers have a high regard for institutions which in a more conservative academic perspective may be ignored or even patronized. So it is hardly news that employers like Oxford and Cambridge graduates, but the fact that they also value those from Hull or Brunel may undermine some conventional assumptions about the hierarchy of universities. Similarly with polytechnics the favourable opinions of Hatfield and Kingston will cause little surprise, but North Staffordshire's high reputation may jolt some similar prejudices. It is always refreshing to be reminded that there are external as well as internal views of higher education, even if their expression is incomplete and anecdotal.

Laurie Tay

COUNTDOWN

To The UGC Letter

DAYS TO GO:

That's seven for, and three against; we are agreed by a clear majority four that every department will receive a letter which gives their exact overall grading. No beating about the bush whatsoever?

That's right, Peter.

Excellent. Let no one ever again describe the UGC as vacillating, for can we move straight on to the next question of the actual grades which we will be using in that critical letter. As you know we have a proposal on the table from the last meeting which suggests that all departments should be divided into Good, Average or Poor.

Yes, James?

I'm sorry to butt in, Peter, but I thought we'd agreed, following Malcolm's intervention, that we should say "poorish". On the grounds that it was marginally less pejorative.

Ah yes. Quite so. My mistake. Well, shall we proceed to allocate these three descriptions – *Good, Average* and Poorish – or have committee members been able to think up any improvements. Yes, Gordon?

I did wonder, Peter, if we might not get a little more flexibility by using named degree gradings. Upper Second, Low Second. That sort of thing. It would give us the valuable option in special cases of being able to award a degree Argyroit research status.

I take your point, Gordon. But I can't help thinking that some departments may say, those awarded Lower Second status – might find an undesirable appellation particularly demeaning. We must respect feelings as far as we are able. Yes, Dorothy?

I wondered if we might usefully take a leaf out of Michelin and award special symbols to each department. Black lie crossed forks.

Do go on, Dorothy.

Well, I haven't worked out every detail of the scheme but so far I'm able to propose Three Crossed Test Tubes for those research departments in chosen, Three Overlapping Magnets for physics, Three Unfilled Questionnaires for social sciences.

A trifle elaborate perhaps, Dorothy. Surely, there must be something simpler. Yes, Geoffrey?

My own feeling, sir, is that we must not be ashamed of acknowledging the presence of excellence. With respect, I feel your "Good" category far too meanmouthed. Not "good" enough we might say. What I would like to see is a phrase which captured the extremely high standard of research in some departments. I would like to propose an unequivocal FIRST CLASS.

That certainly seems to enjoy wide support, Geoffrey. But what about the more difficult question which faces us? The question of finding two other descriptive but relatively inoffensive categories.

No problem at all, sir, once First Class is accepted. May I formally propose CLUB and ECONOMY.

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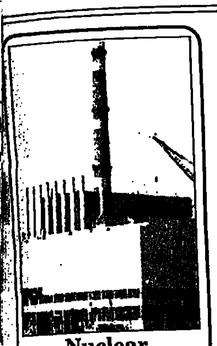

Nuclear power after Chernobyl, 14

Sir Keith orders BEdmates plan

by Patricia Santinelli

Seven colleges have been ordered to either enter or examine "close academic association" with nearby universities and two are to lose their teacher intake entirely as part of an expansion of public sector teacher training places announced this week.

Sir Keith Joseph, the Secretary of State for Education and Science, who seized the teacher training exercise back from the National Advisory Body in January after disagreements over timetabling, announced that the number of primary teacher training places would be increased from 7,020 to 8,165 by 1989. Secondary places are to go up from 3,930 to 4,545. As a result student numbers will increase at 50 out of the 54 institutions currently involved in teacher training.

Bishop Grosseteste, North Riding, Charlotte Mason, Rolle and Westminster colleges have been asked to enter into academic association. The first three are to link with Nottingham, Leeds and Lancaster universities. Westminster is considering an association with Oxford University and Rolle is likely to join Exeter University.

Bishop Grosseteste, North Riding and Charlotte Mason have already discussed plans with the universities concerned. This would involve students spending their second year at the university which would be paid a block fee.

Bretton Hall and La Sainte Union College have been asked to examine links with other institutions, probably Leeds University and Southampton University.

Humberside College of Higher Education and Portsmouth Polytechnic are to lose their intakes from 1987. St Mark and St John, Plymouth is to lose its primary training but expand its secondary training. Both St Mark and St John and Portsmouth were recommended for closure by the NAB last year but were reprieved.

The Secretary of State has also accepted that Hertfordshire College of Higher Education should be merged with Hatfield Polytechnic. This was rejected by the NAB last year but Sir Keith asked them to think again. Its intakes for 1988 and 1989 will be reviewed in the light of progress.

Sir Keith said his aim was to foster the further development of a high quality cost effective and resilient system of initial teacher training. This would enable it to respond flexibly to changing demands and meet the increasing call for more rigorous and effective teaching in schools.

He had sought to strengthen the training system by ensuring that institutions had strong academic links. In fact all institutions have been advised to examine association with others.

He had concentrated primary numbers so that each training establishment offering a primary BEd course could provide the necessary minimum of two years of subject studies across a range of curricular specialisms.

He had also concentrated secondary numbers into minimum group sizes of 15 or more thus ensuring the reinforcement of subject strengths by grouping intakes to related secondary subjects together within the same institutions. He had also given particular attention to provision for shortage subjects.

● Sir Keith has also written to the Bishop of Salford, chairman of the governors of De La Salle to confirm that the college is to close from 1989. Sir Keith had given the college until March 31 to put forward plans for a merger with the Liverpool Institute of Higher Education, but the two institutions failed to reach agreement. They have been given three weeks to appeal.

Leader, back page

Autonomy, research 'support standards'

by Ngaio Crequer

University autonomy and close links between teaching and research are at the heart of the system for maintaining academic standards, the confidential draft of the Reynolds report argues.

The report is the first attempt to survey procedures for monitoring academic standards in the universities. The committee was set up in September 1983 by the Committee of Vice Chancellors and Principals under the chairmanship of Professor Philip Reynolds, then vice chancellor of Lancaster University.

In his draft report Professor Reynolds says: "The quality and standards of university education will be higher the greater the autonomy that institutions can enjoy."

Universities needed autonomy because of their function of raising fundamental questions about ways of handling moral, medical, material and technological problems. Universities were always among the first targets of anti-democratic revolutions, he said.

He makes a strong plea for the inter-relationship between teaching and research, a relationship now under threat because of spending cuts.

In the laboratory sciences research was often a cooperative team activity so students' work could only proceed if teachers were engaged in research. Even keeping abreast of developments was difficult to satisfy in the sciences without doing research.

The same arguments were beginning to apply to the humanities and in increasing degree to the social sciences, says Reynolds. The teacher must be engaged in the solution of real-life problems to illuminate his or her teaching and inspire confidence in the students.

Professor Reynolds' report includes revised versions of various codes of practice already produced by the committee. These deal with the external examiner system, external involvement in the monitoring of standards, arrangements for postgraduate training and research, appeals at postgraduate research degree level, and internal monitoring procedures.

He says that because of the codes, there has been a critical re-evaluation of current practices, and changes of procedure.

The purpose of the committee, says Reynolds, was to increase the degree of validity and reliability of standards and to make judgements of quality less fallible.

He says there are numerous influences from outside on university degree courses, such as lay members, the professions, and the University Grants Committee.

So the contrast between the universities and the public sector in the way they monitor quality "is less a contrast between external validation and self-validation than between a centralised and a decentralised system."

The codes call for a wider role for external examiners and an effective system of regular appraisals of staff performance.

On the controversial question of appeals against academic decisions, Professor Reynolds argues against allowing them at undergraduate or taught master's degree level. Many examiners will have determined the final result.

But at postgraduate research degree level the number of examiners and the subject area will be so small so appeals on the grounds of prejudice, bias or inadequate assessment may be admitted.

The draft report now goes to the CVCP for comment.

Leeds fixes it for Jim

Well now guys and gals, how's about that then? Leeds University fixed it for Jimmy Savile OBE, entertainer, road-runner and untiring charity worker to receive a honorary degree from its chancellor, the Duchess of Kent. Another honorary graduate was Sir David Lean, the film director.

Arts places slump in polys

by David Jobbins

A dramatic drop in first year students reading languages and the humanities outside the university sector is disclosed in official figures which confirm a continued decline in the demand for engineering places.

First year enrolments at polytechnics, other colleges and direct grant institutions in 1985 rose by 6.1 per cent compared with the previous year, according to provisional figures issued by the Department of Education and Science.

But first year enrolments for languages and linguistics fell by 12.9 per cent, the humanities by 5.6 per cent and engineering by 1.2 per cent.

The decline in engineering was first detected in 1983, but technology has remained steady. Subject areas recruiting more than the average for the sector include medicine and health (9.5 per cent.) business management (9.8 per cent.) social/administrative courses (6.2 per cent.) and professional and vocational courses (6.7 per cent.)

Inservice teacher training rose by 38.4 per cent, a distortion caused mainly by the reclassification of the part time City and Guilds further education teachers certificate as an advanced course. As a result of this influx, first year enrolments for subdegree higher education courses rose by 8 per cent compared with the 3 per cent increase for degree courses.

While polytechnic enrolments rose by 4.6 per cent after last year's unchanged level, other local authority colleges showed a massive 8 per cent increase. However this was essentially a catching-up exercise – the increase

continued on page 3

Joseph attack on barbarism

A highly charged appeal to students to abandon their "No platform for racists and fascists" policy came this week from Sir Keith Joseph, Secretary of State for Education and Science.

He criticized those students who aligned themselves with the "new barbarism" and sought to deny a platform to speakers with whom they disagreed.

In a three-page letter to Mr Phil Woolas, president of the National Union of Students, Sir Keith appealed to students who were "sincere proponents" of democracy but had allowed themselves to be "swept away" by their distaste for racism and fascism.

To those "well-meaning but misguided" supporters of the no platform policy he said: "Remember now, before you do lasting damage to your institutions and our political life, that serious free and orderly discussion of controversial issues is the hallmark of any society which is worth living in.

"I plead with you to remember that the denial of such discussion is a denial of respect of individuals, an attitude morally equivalent to that taken by the fascists and the racists whom you wish to oppose."

Sir Keith said he was saddened by a "lapse into the dark ages" in universities and polytechnics which should be the crucibles of debate and discussion.

"In a university or polytechnic, above all other places, there should be room for the discussion of all serious issues, for the willingness to hear and dispute all views including those that are unpopular, or eccentric or wrong."

Freedom Bill silenced, page 6

Enthusiastic step towards Imperial – St Mary's merger

by Nina Hall
Science Correspondent

The first steps to amalgamate Imperial College of Science and Technology and St Mary's Hospital Medical School, Paddington, were taken last week at separate but "synchronous" meetings of their academic boards.

Both voted unanimously to set up a working party to examine the creation of what would become the Joint College of Science and Technology and Medicine.

"The idea was greeted with enormous enthusiasm on both sides", Professor Eric Ash, rector of Imperial College, said.

The possibility of combining to form an American-style research centre has been considered for several years, but in the past few months the discussions have taken a more serious turn.

"The time is ripe" Professor Peter Richards, dean of St Mary's Medical School, said. "There is now a great willingness in both sides to bring together the two as complementary units."

He pointed out that the two institutions were natural partners, on opposite sides of the Serpentine. "Geographically it would make a very nice campus," he said.

Imperial College in South Kensington is a federation of three institutions, the Royal College of Science, the Royal School of Mines and the City and Guilds College. It is the largest college in Britain devoted to science with more than 5,000 students, of which 33 per cent are postgraduates. St Mary's Hospital Medical School, which currently occupies a site near Paddington Station, has 550 students.

St Mary's is very strong in medical research and would gain enormously from Imperial's expertise in biomedical technology.

"Imperial College has resources that have not been fully harnessed," Professor Richards said, while Professor Ash added that Imperial College "finds the idea of combining its life science to St Mary's clinical research very attractive".

It is proposed that the joint college would have strong ties with the Royal Postgraduate Medical School at Hammersmith, which is weak in basic research.

Imperial College is directly funded by the University Grant's Committee, while St Mary's is a funded through London University. No changes are envisaged in the funding arrangements at the moment.

The working party hopes to come up with some firm recommendations in a year's time. Amalgamation could happen by 1988 and would make this the first college of its kind in Britain.

Retiring from the BBC after 42 years' service, Doug Smith, the senior producer for BBC North in Leeds, reminisced about some of the many absurdities encountered in making television programmes, at least one of which concerned me.

In the early 1970s, having just arrived in Leeds to put the polytechnic together, I used to take off a day from time to recover my sanity and spend it with Doug, a cameraman and sound recordist, making short seven- or eight-minute pieces for local television about towns and villages in the region. They were very popular. There is nothing more interesting than an account, however inaccurate, of the place you live in.

One of these was Whitby. For various inexplicable BBC reasons the filming had to be done in late autumn or winter and to get the right picture of Whitby as a whole we needed to set off by boat on the high tide, sail out of the harbour and scout around until we froze solid.

The only hotel which would take us in at that time of year was a pub beside the harbour. High tide was early in the morning, so I asked the landlord if we could have an early morning call. "Certainly", he replied, went out to the kitchen, came back and gave me an old alarm clock. "Quite reliable", he said.

That may have just been symptomatic of the celebrated bluntness of the North of England, but I sometimes wondered if it was even more true of seaports. For another inexplicable BBC reason we filmed in Hull several times – at least once because the cameraman dropped the film into the sea while we were out in the Humber estuary and we had to go back and do it all again. The problem – and what ultimately gave offence – was that wherever we went there were people eating chips. The offence was compounded by my saying over a shot of a lady on a park seat with a bag of chips in her hand: "Was this the face that munched a thousand chips?"

So on one of our later visits we set up the camera carefully where there were no chip-eaters anywhere within sight or smell. The moment we switched the camera on, a man came round the corner eating from the biggest bag of chips you ever saw.

We filmed from a rubbish dump on a hill in Sheffield, the top of a high building with no parapets in Leeds, in a sewer in a castle, on a crazy ladder holding me up in Lincoln, in drenching rain and biting hail in Bradford. Now and again I would ask myself if I was mad, a view shared by innocent passers-by when they saw me apparently talking to myself on a bridge about the North of England and couldn't see the camera on the other side of the river. "Bye, these days!", said a man one day, holding his fist ready to fell me if I turned violent. I was tapping a stone wall and muttering about the sound it made.

I developed the utmost respect for cameramen who can hold on to a cliff with one hand and take shots with the other, with one toe keeping them in place, and for others who would stand in the face of the traffic to get the right shot. Perhaps we all thought of the fame we would earn when the film was seen. But I doubt it. We were doing a job that can only be done by a team. And that was an education in itself.

Patrick Nuttgens

letters to the editor

Bad scholars drive out the good

Sir, – Your front page report 'Salaries Study Reveals Drab Academic Life' (*THES*, May 2) touched on some important issues.

As there are now so very many fewer vacancies than when most academics entered the profession, one might have supposed the universities were creaming off the very best of the qualified applicants, so it is a little odd that university staff are "moderately or very dissatisfied" with the calibre of many of their newly qualified colleagues.

This seems to confirm the phenomenon I described nearly 12 years ago in *New Society* (November 7, 1974) whereby not particularly gifted academics who were able to squeeze into jobs in the relatively uncompetitive conditions of the 1960s tend to give preference to job applicants like themselves, with the result that a kind of Gresham's Law operates in which bad scholars drive out good.

Because the average age of the academic profession is increasing, the profession is more and more concentrated into the higher end of the salary scale: in other words, as it gets older it costs more. It would be reassuring to know that it also performs better, gives better service.

Inquiries into salaries tend to confirm the general impression that universities conceive themselves as existing principally to provide jobs for academics. It is now time for an inquiry into what academics actually achieve, in terms of giving the best possible education and intellectual stimulation to students and of carrying out original and productive research.

It is no longer a question of whether academic salaries are high enough to satisfy academics, but of whether this country can afford to rely on the academic profession, as currently constituted, to provide intellectual leadership and to sustain our future reputation in science and scholarship. In an article in the *Times Literary Supplement* on April 11 Lord Annan suggested that there was a need for something like the Royal Commissions which reformed Oxford and Cambridge in the 19th century; and I should think that anyone who is seriously interested in the future of Britain's universities would support this proposal.

Yours faithfully,
DR A. D. HARVEY,
273 Stoke Newington Church Street,
London N16.

Lord Annan: call for commission

Architecture role

Sir, – Your report on the Council for National Academic Awards' policy paper on architecture degree courses in the public sector (*THES*, May 9) quotes a Royal Institute of British Architects' spokesman as criticizing the CNAA for going beyond its remit by generalizing about architecture education, since the council's role only extends to the first three years (Part I) of architecture courses.

In fact, as RIBA which has an observer on the CNAA architecture board knows, the CNAA report specifically limits itself to first degree courses in the public sector and does not cover Part II courses, which are RIBA's province. Perhaps a closer reference to the report will illustrate CNAA's approach more clearly.

The report quotes the EEC 1985 directive on architecture qualifications, which lists technical and social study requirements, as well as aesthetic and theoretical ones. The CNAA goes on to say: "These aims apply to architect's education in the UK. It cannot be expected that they will be fully achieved within the first degree element (Part I) which CNAA currently validates. Nevertheless, first degree courses are expected to provide the foundation of an architecture education and the list provides a useful guide to the breadth of the curriculum."

The major issue which the report then deals with is weaknesses which CNAA visiting parties have identified in the delivery of courses, largely, but not wholly, in the area of technology.

In doing this the report draws on both the long experience of CNAA in validating degree courses in architecture and on the expertise and breadth of perspective provided by the CNAA's committee for the built environment which also has responsibility for the related subject areas of building, building services, landscape architecture, surveying and town planning.

Yours faithfully,
EDWIN KERR,
Chief Officer, CNAA.

Sir, – Antithesis (April 25) is incorrect to state that Leeds has "lost" its honours programme in architecture. The matter is still under discussion at the Council for National Academic Awards and may be raised at council level.

Yours faithfully,
C. J. MORGAN,
Leeds Polytechnic.

Speechless

Sir, – I am grateful to the *THES*, for bringing to my attention the notion that students can learn by talking, that the primary object of small groups should be to encourage students to talk and discuss" and that small groups can be a great help in teaching students to express themselves orally ("Small talk frontiers of pedagogy being pushed back in this way we need have no further worries about the quality of teaching in universities.

In polytechnics the situation is more problematic. While I am informed that Professor Eikan's students learn in lectures by merely listening, in small groups by talking and through essay work simply through writing, we have found that our students need to think as well. Our students also have feelings and might find Professor Eikan's recommended line in questioning humiliating.

The literature on small group teaching makes it clear, and our experience confirms, that creating a tone within which it is possible to encourage the intellectual engagement of students and their active participation in worthwhile discussion is difficult. To achieve it often requires the skilful use of a variety of teaching techniques. Perhaps this helps to explain why polytechnics feel they need to undertake the development of teaching methods, and invest in educational development units to achieve this.

Teachers in universities, with their research ethos and higher intellectual standards, clearly require no such development.

In open-mouthed astonishment,
Yours sincerely,
GRAHAM GIBBS,
Head, Educational Methods Unit,
Oxford Polytechnic.

Examining examiners

Sir, – There is a way in which readers can help test Ken Pease's assumptions about external examiners (*THES*, May 2). Most universities and polytechnics and colleges have agreed to help in a survey of the ways in which external examiners undertake their work. Over the coming months I and a small team of colleagues will be sending out questionnaires and interviewing examiners.

It is a grave reflection on responsible management that we should know so little about an activity which lies at the very heart of our national higher education system. It is the major check on standards. So despite the competing demands of answering University Grants Committee and National Advisory Body letters we hope people will give the time to answer our questions too. The answers are of immediate interest to us all.

Readers who are not approached directly by us can also help by writing to tell me of their experiences as, or with, external examiners in all parts of the system.

Particularly interested in receiving descriptions of specific incidents which illustrate some of the difficulties or triumphs, quirks or strengths of the approaches which external examiners take and the way in which they view the problems they face. (Sources will be protected and no individual or institution identified in our eventual report).

Yours faithfully,
DAVID WARREN PIPER
The Centre for Staff Development In Higher Education,
2 Taviton Street,
London WC1H 0BG.

Kept posted

Sir, – I much enjoyed Richard Cobb's article about Robert Dauvergne (*THES*, May 2). His account of the latter peeling posters off walls reminded me of a period in 1947 when I served briefly with the Field Security Section of the 6th Airborne Division during the closing stages of the British Mandate in Palestine.

The OC was Captain John Linklater who was famous both for his linguistic ability and the way in which he and his men would appear in the most extraordinary places at the most unlikely times. He had been in France with SOE in the war and operated in the spirit of poacher turned gamekeeper. Among the section's duties were the regular supply to higher authority of copies of IZL and Stern Gang wall-posters. Initially Linklater would drive round Haifa peeling or cutting these off walls, invariably a hostile crowd would gather and one's activities became, to say the least, not free from danger.

One evening, however, Linklater turned to the growling mob and said: "Some of you must be concerned with putting up these posters and others of you are bound to know people in the business of production. It would be so much easier if you could simply send me copies through the post, c/o Army Headquarters, Mount Carmel". He then repeated this message with the greatest rapidity and apparent fluency in some six other European languages.

From then on they were delivered daily by the postman.

Yours faithfully,
DAVID JOHNSTON-JONES,
Headmaster,
Merchant Taylors' School,
Crosby,
Liverpool.

Letters for publication should arrive by Tuesday morning. They should be as short as possible and written on one side of the paper. The editor reserves the right to cut or amend them if necessary.

Ulster union

Sir, – I refer to the article (*THES*, May 2) reporting that the National Association of Teachers in Further and Higher Education *is not happy that it gave up* its members' interests at Ulster Polytechnic without a fight. The Association of Polytechnic Teachers has retained its membership at Ulster and members have been relieved that it has done so. The interests of the Polytechnic staff would otherwise have been overborne by the political interests of the AUT which appear to dominate their national and local actions.

While the AUT appears to be seeking to achieve a backstairs agreement with the vice chancellors for a closed shop, those of us who have an alternative must retain it.

GRAEME K. J. BROWN,
Chairman,
University of Ulster,
Association of Polytechnic Teachers.

Research funding

Sir, – The criticism levelled by Professor R. J. P. Williams of the Government's research grants by the research councils (*THES*, April 25) is one that needs to be followed up. The club-like nature of the selection committees it is difficult to see how the self-interest of the committee members can be avoided. The confidence in the system also is a symptom of a malaise in research strategy. The problem has become more acute by the restrictions in funds and their concentration on fewer centres.

The system favours the large and established fields of study at the expense of the new and more dynamic growth areas. A new academic commission could be the answer to the University Grants Committee which requires universities to implement research policies. Lack of communication between the research councils and universities seems inevitably to result in redundant conflict and duplication of effort. The EEC research programmes are gathering momentum but university links with these seem haphazard and remote with consultant loss of access of research.

The prime aim should be to ensure that the research councils and universities draw on the best advice and judgement as to research strategy and how to realize as far as possible the scientific talent in the universities and other institutions. Much could be done to improve the system. As it is the remedy would be to set up several committees containing members appointed solely by government but also by universities, learned societies, industry and consumers for the purpose of monitoring progress and debating the way forward in an open manner. In contrast to the closed system used at present, it is significant that Japan has set up a series of such scientific development councils, to deliberate on the long-term basic policies and strategies.

A solution to these problems is essential in order to mobilize the scientific and technological resources of Britain in the service of the community.

S. J. PIRT,
Head of Microbiology,
King's College, London.

Bart's meeting

Sir, – I would be grateful if you would print a correction to the penultimate paragraph of the article "Bart's close to sue UGC" (*THES*, April 25). The article stated that the college has claimed that the attendance at the recent meeting of the joint medical advisory committee was "rigged". The college would have had no grounds for doing so, since the meeting was conducted in an entirely proper manner. The attendance was, not unexpectedly, rather larger than usual. I am not concerned that you should correct the erroneous impression given by a statement which is damaging to the chairman of the committee, to the university and to this medical college.

I. KELSEY FRY,
Dean, Medical College,
St Bartholomew's Hospital.

Archie calls foul on Fowler

Edinburgh University's rector, sports commentator Archie MacPherson, looked up at the leaking ceiling. "We are in a typical student flat," he said. "This is in fact a palace compared to some of them."

There were no chairs for the journalists, forced to huddle round the walls by the buckets on the floor and makeshift containers of plastic rubbish bags catching the water coming in the window frames.

The hacks jostled to lean their notebooks on top of a sideboard already occupied by a hamster and tins of the Celebrated Moffat Toffee.

Archie explained that he will celebrate his first year as rector next week, but will at that point be in transit to Mexico for the World Cup. He has been an active rector, spending an average of three days a week at Edinburgh, and confessed he felt slightly guilty about leaving for a month. "Or hopefully six weeks," he added, in the understandable expectation that Scotland will win.

He had called the press conference to support Edinburgh University Students' Association's stand against the Fowler social security proposals, he said.

"They want eventually to take students right out of the welfare system altogether. They want to get back to the days when students existed on the grant, their parents, and their jobs in the summer. From my point of view, that's cloud cuckoo land.

"What frightens me as an individual is that we're moving towards a kind of elitist education system where only those who can pay for it can get it," he said. Students did not expect a luxurious lifestyle, but they expected encouragement from society.

"I hope the public will support the students in whatever steps they take to demonstrate their hostility to the Fowler proposals."

Firms who fail in training

by Maggie Richards

Preliminary results from a new survey of management education in Britain show that more than half of all UK companies make absolutely no provision for training senior personnel.

The findings reveal that almost three quarters of small companies – those employing between 20 and 49 staff – fail to offer training for managers.

But also disturbing to the research team at Bath University which carried out the study, has been the discovery that an estimated 20 per cent of the country's largest employers – those with 1,000-plus workers – provide no training courses in management skills.

The Bath study, from the university's school of management, is being sponsored by the Economic and Social Research Council in conjunction with the Department of Trade and Industry. It aims to obtain up-to-date information on the extent, nature and quality of management training in Britain, and is attempting to assess how much companies rely on in-house training arrangements and how many use external facilities.

The initial results of the Bath survey come at a time when the government is paying increasing attention to the importance of management education for the country's economic growth.

In recent weeks news has come of two new major investigations into the area. A review of management education is to be conducted jointly by the British Institute of Management and the Confederation of British Industry; while the Manpower Services Commission and the National Economic Development Office are collaborating *in an analysis of how management* training operates within Britain's four major competitor nations – Japan, France, West Germany and the United States.

The Bath Survey has covered 2,500 companies, drawn mainly from the manufacturing industries and the distribution and professional sectors.

Initial results show that of the firms making no provision for training, well over one third claimed it was not necessary because previous qualifications or job experience would suffice.

The time and cost of training were cited by just under 50 per cent of *non-participants* as a reason for not undertaking courses.

Summing up this view, the chairman of one major company reported to the *research team*: "In the highly competitive sphere in which we trade time is not available for formal management training. Managers are paid to successfully manage, and if that cannot be achieved, then they must be replaced."

The extent of non-participation in training took even the head of the survey by surprise. Professor Iain Mangham from the school of management at Bath commented: "We were very surprised, in particular when we got to the stage of looking at results for companies employing more than 1,000 people.

"In general the attitude to management education in this country seems to be a hit and miss affair. There are some extremely good companies making provision, but there also seem to be a substantial proportion who are not interested at all."

Of the companies which do undertake training, the Bath survey found the majority believed the quality was good, but that more was needed.

In-house training also appeared to be crucial to many firms, irrespective of their size. Smaller companies tended to make more use of external courses than medium or larger firms.

The smaller companies too tended to pay out more for training, with the median cost running at £600 a year for each manager; whereas the largest companies spent £358 per head.

The survey also revealed a lack of top management involvement in training issues. Only rarely was the board of directors consulted on training policy.

At present the research team at Bath is conducting further in-depth interviews with 250 companies from the *original survey.*

The research team is hoping to conduct a further investigation into issues raised by the current survey. These would include an exploration of the reluctance of companies to become involved in management training.

Time running out for two-legged pay race

Time for a joint approach by vice *chancellors and lecturers' union* leaders aimed at wringing more money from the Government for universities in this summer's public spending review is fast running out.

Negotiators for both the university employers and the Association of University Teachers acknowledge that they must agree on a package covering pay, salary structure and related issues by next week if they are to influence the Department of Education and Science in time.

And both sides accept that negotiations are at a critical stage. A report on two sessions of Committee A held in the past 10 days will be made to the AUT's council in London today and a further round of negotiations is scheduled for this afternoon.

Talks have been intensive since completion of the jointly commissioned consultants' report on recruitment and retention, and involve balancing the massive cost of stemming erosion of salaries against changes in pay structure. The employers are convinced that the Government will only accept the argument for more money if it is accompanied by practical proposals for a more cost-effective salary scheme, and are pressing for a greater degree of local flexibility within an overall national framework.

Both sides have to agree before the approach to Government through Committee B is made – there is no scope for separate cases to be made.

Dr Alan Taylor-Russell, the AUT's president, told the council meeting: "The need for a further injection of cash to restore salary erosion is no less urgent now than it was a year ago. Whether we take the rise in the cost of living or average earnings as the guide the shortfall is much the same as it was, while the findings of the survey point to the need for even larger increases if university salaries are ever to become competitive again."

General secretary Ms Diana Warwick said: "There is still a long way to go but I am encouraged by the progress we have made."

IT skills shortage warning

by Nina Hall
Science Correspondent

There will be a serious shortage of skilled professionals in information technology unless higher education and industry collaborate to improve the situation, warns a report from the Institute of Manpower Studies.

The report says the UK market for IT products and services was worth about £6 billion in 1985 and is now growing at a rate of 10 per cent a year, but there is "serious concern that skill shortages are constraining development".

Currently there are about 200,000 professional IT staff in the UK – a third with electronic and two thirds with computing related skills. The majority are under 35 and male.

Employers who include mainly electronics based companies but also a fast growing sector of IT services companies prefer to recruit experienced staff. The demand for new IT graduates will increase by 50 per cent in the period up to 1990, barring any major economic downturn.

The output of IT graduates is growing although there was a reduction last year because of Government cutbacks in university spending. Most graduates have degrees in electronic engineering or computing but mathematicians and physicists are also recruited, says the report.

While universities are expanding the number of suitable degree places available to match the needs of the IT industry, "there is concern that there may be difficulties in filling all the places with suitably qualified students". Women account for only 10 per cent of IT students.

The report points out that a shortage of good maths and physics teachers is a serious underlying cause. In higher education too there is a dearth of IT lecturers as well as up-to-date equipment. Nearly 10 per cent of posts were unfilled last year in the departments the authors of the report looked at. One department saw its own MSC course as the only source of recruitment for lecture posts. The report blames salaries that are uncompetitive with those in industry.

More collaboration between companies and higher education institutions is needed in providing adequate training programmes and the latest equipment, says the report.

Another growing source of graduates is postgraduate conversion courses. Over 80 per cent of these go directly into IT employment, says the report. The report concludes:

- A high priority should be given to the supply of physics and maths teachers in schools.
- Universities must encourage the intake of more girls, mature students and students without maths and physics A levels into IT related courses.
- IT courses must avoid overspecialization and emphasize project work.
- Companies need to be more flexible in the recruitment of staff and collaborate with higher education establishments in providing continuing education programmes in IT.

Information Technology Manpower in the 1990s, Institute of Manpower Studies, £16.

Tribunal ruling forces 'new blood' change of heart

The University Grants Committee is to send out a circular in the next two weeks advising universities that the 35-year age bar will not apply to still unfilled or to be refilled "new blood" posts.

The exact wording of the circular is being considered by the UGC's lawyers but a spokesman confirmed that the circular will specify a "let-out clause" and, although the age bar will still apply nominally, it will be waived in cases where an applicant has taken years out of academic life to bring up children.

The change of heart follows the *Industrial tribunal ruling which found* that Dr Felicia Huppert, a senior researcher at Cambridge University, had been indirectly discriminated *against when the UGC failed to ratify* her appointment to a new blood post in psychiatry.

The UGC has decided not to appeal against *the decision and has agreed to* appoint her to the post which was left vacant pending the outcome of the hearing.

Dr Huppert has still to be notified by the UGC about their decision but is now confident she will finally be appointed since she entered into a *legally binding agreement with the* university that if the UGC released the money she would automatically fill the post.

She admitted this week that she had been "fairly gloomy" about ever being appointed to the tenured post after the hearing decision.

"I began to think that it was a pyrrhic victory and that maybe I had won in principle but not in practice," said Dr Huppert. *"I must admit that I had been thinking about taking a job abroad."*

She had been disappointed by the lack of support from female colleagues at Cambridge.

"OH NO! IT'S A UGC-O-GRAM."

Enrolments drop

continued from front page

for the period 1980/85 for all enrolments was lower than at the polytechnics.

If the figures are adjusted to take account of the reclassification of the FE teachers' certificate, first year enrolment fell to 5 per cent, still regarded by officials as a significant growth on the static situation of 1984 but in line with longer trends.

But Labour education spokesmen believe too little is being done to encourage entrants from non-traditional sources and much of the conference organised by Higher Education for the Labour Party in Birmingham next month will deal with this issue.

The party's higher education spokesman, Mr Andrew Bennett says that ways should be found of attracting working people back into higher education.

Axe poised over second art school

by John O'Leary

A second college is likely to close if the National Advisory Body accepts its secretariat's proposals for student intakes in 1987, it was revealed this week.

The victim would be Loughborough College of Art and Design, which has been recommended to lose all its advanced places, which represent 75 per cent of its work. Dr Roger Hampson, the principal, admits that: "The consequence of implementation would be virtual extinction."

Only Rose Bruford College of Speech and Drama, at Sidcup, Kent, had been identified previously as likely to close as a result of the NAB proposals. A number of other colleges would lose all advanced courses but would survive on the strength of their non-advanced work.

The NAB officers have assured the college that the proposals were not made lightly and have made out a detailed case for withdrawing courses there. They insist that:

- the three fine art courses in the East Midlands would be too weak if all were cut equally;
- provision is duplicated between Loughborough and Leicester Polytechnic;
- the three BA courses in art and design are close geographically;
- Loughborough's fine art course should close as the lowest recruiter and that its design courses would be weakened and should also close as a result.

The college has drawn up its response, claiming that an equal cut between the three centres would still leave viable numbers and that the nature, content and philosophy underlying courses at Loughborough and *Leicester were sufficiently different to* negate the charge of duplication. It has also pointed out that the East Midlands Further Education Council has found no evidence of over-provision in art and design and taken issue with allegations of low recruitment and the NAB's causal link with design closures.

In addition, Loughborough is making strong claims for the quality of its work, comparing the success rate of less than 2d per cent among applicants to its design courses with the national figure of 32 per cent.

Dr Hampson described the NAB proposals as "outrageous and exceptional" and quoted Mr George Walden, under secretary for higher education, in support of the coexistence of polytechnic faculties with small, specialist art and design colleges, creating what he described as a rich and diverse tapestry.

Dr Hampson said the NAB secretariat was conducting an unwarranted and unauthorized onslaught against the specialist colleges, which would leave only two or three surviving. "The deliberate extermination of the independent colleges of art and design will leave the 'tapestry' drab and threadbare for future generations of students," he added.

DON'S DIARY

SATURDAY/SUNDAY

We have a former student staying with us. Currently working as a journalist in the Midlands she is able to counsel our younger daughter, who is considering both journalism and the law for a future career. Keep both options open by doing a law a degree, and expect to earn less in journalism, is her succinct advice. We take her to the National Museum of Film, Photography and Television in Bradford, where she bumps into a colleague from a rival paper. It's a tribute to the imaginative approach that even professionals enjoy the photo-journalism room. But the visiting exhibition entitled "Britons" is the show-stealer: a series of group photographs that celebrate the humorous eccentricities of their subjects in high-spirited style.

MONDAY

The economy of my time on weekday mornings is Micawberish. Leave home seven miles outside Leeds at 8am prompt – result happiness and arrival at work in York by 9am. Leave home at 8.03 or 8.04 and I miss a connecting train in Leeds: result misery. Today there is a meeting of the steering group for my unit so it is all the more important to be there on time, which I achieve at the price of eating only half my breakfast.

The unit was set up on a prototype basis in 1979 and I left a tenured post to work in it, attracted by the scope it offered to put educational ideas into practice and to create something new. Not the least excitement of the job has been the annual question-mark over our funding. This year, true to form, although our contracts have all run out we have not yet received our forward funding letter. But we're used to this and we have a verbal assurance at the meeting that various approval procedures have been gone through, leaving only the most august rubber stamp to be applied in May, after which we will get our letter. The signs are we may be able to expand.

No one at the meeting seriously considers the unit won't continue, and the main discussion centres around forward planning of our work. Our remit has been widened well beyond our original client group (architectural staff at NHS regions) to include the full range of health building and estate management staff at both regions and districts throughout the country. These organizations are themselves going through a period of change and we have to set up new machinery for planning appropriate educational programmes with them.

The meeting breaks up amid much exchanging of health service intelligence and I catch up on news of the progress of someone at one of our client offices for whom I arranged personal tuition towards a professional qualification. The external exam is in a couple of months – I hope he will pass.

TUESDAY

I spend the morning on the main university campus having a guided tour of the accommodation I have booked for a residential short course in the autumn. There are many small details to be ironed out with the conference office, ranging from what participants will eat to the need to ensure the smoke detector will be switched off for a demonstration that produces bangs, sparks – and smoke. The course is about management procedures to ensure fire prevention and protection in health service premises. The demonstration shows the lethal potential of a number of everyday items and activities, including glueing floor tiles or using perfume sprays or aerosols while smoking. A large furry bear with a benign expression, a spurious BS kite mark, and three badly singed limbs (he has served in this cause before) will form the centre piece of the demonstration. With his torso wrapped in a fire blanket the remaining good paw will produce a terrifying sheet of flames, so I must ensure both spare fire blanket and a metal bin to dunk him in.

This afternoon is devoted to catching up with correspondence and dealing with jobs arising from another workshop I ran earlier this month. In the evening I make an attack on the revision of a chapter of my thesis, gleefully chopping overwordy passages I wrote two years ago. Snip and stick (I like the old-fashioned kindergarten methods) and the job is done, producing a goodly parcel to post to my supervisor.

WEDNESDAY

Out of the house by 6.55am today to catch the Yorkshire Pullman to a meeting in London. Everyone on this train either works or sleeps, and fortified by British Rail's inimitable burned toast and instant tea I get a lot of work done.

The meeting is of a group with responsibility for strategic planning and design of long-term training to support a new DHSS policy initiative. It's an intriguing task, the group works together well and we have a fruitful and sociable meeting. I come away with a job to do on a theme that is close to my heart, namely looking at methods of credentialling work experience so as to gain learners entry to award-bearing courses, or perhaps exemption from some part of them. Part-way through the train journey home I switch from work to snooze and spend what is left of the evening playing a rather sleepy part in family life.

THURSDAY

I can't look at a train today and have plenty of writing to do, so I work at home. First thing in the morning I drive my daughter in for an abortive visit to the dentist (she should have gone yesterday, not our mistake fortunately) but this frustration is cancelled out by the delivery, on our return, of the unexpected gift of a case of wine – in good time for my husband's birthday next week. The donor has put together a super collection, leaving us with the big decision of whether to hold a party and drink it all at once, or whether it would better repay this good taste to spin it out over a number of more contemplative occasions. A nice point to ponder in breaks from writing up yesterday's meeting and doing some work on a book I am editing.

FRIDAY

York affords some major and many minor pleasures. Among the former I count the King's Manor where my office is located; among the latter my regular morning route through the museum gardens, greeting squirrels, peacocks, collared doves and a few favourite trees just like that weedy wet Potherington-Thomas.

This morning the small business-woman in me is to the fore as I work on the costings for my "fire" seminar: I have to make a surplus on this one. A walk in the sunshine mid-day is followed by a satisfying afternoon devoted to justifying the "research" part of my job-title. I'm home by 6.15 – very ready for a weekend of domestic bliss.

Frankie Todd

The author is research fellow at the NHS continuing education unit at the University of York.

Princess Anne, as chancellor of London University, arrives at the London School of Economics, escorted by Lord Flowers, the university's vice chancellor, for a visit this week. Princess Anne participated with students in a lively debate on developing countries during her tour of the school.

College of the Air plan for training

by Maggie Richards

Concrete plans for a new College of the Air to do for training what the Open University has achieved at varsity level are currently under scrutiny by the Government.

But unlike its academic counterpart, the new college would not be established as a separate institution, nor would it have responsibility for enrolments or conferring awards.

Instead, higher and further education institutions throughout the country are likely to be consulted shortly with a view to full participation in the project.

Informal discussions about the new college have been taking place between broadcasters and representatives of both the Department of Education and Science and the Manpower Services Commission over the last few weeks.

What has emerged is a plan to create a small independent central agency which would act as a coordination point between broadcasting companies and educational institutions.

The College of the Air, it is envisaged, would operate on two levels. Prime broadcasting time would be used for "taster" purposes, to promote the value of training generally and some specific courses.

Television and radio would also be used to broadcast some distance learning materials supplied by colleges, and which might also be supported by direct tuition within the institutions.

The agency would be responsible for coordinating the provision of courses at colleges and polytechnics throughout the country, and for commissioning distance learning materials where necessary. It is recognized that a wealth of material is already available, much of which has been generated through the Manpower Services Commission's Open Tech programme which has encouraged institutions to develop distance learning courses in vocational areas.

The College of the Air would take full advantage of the changes in vocational awards recently outlined in the *Review of Vocational Qualifications*, particularly the accreditation opportunities. But the work of the college would be strictly limited to sub-degree levels.

Talks between education and training officials and representatives of both the BBC and the Independent Broadcasting Authority have produced a possible launch date some time in the autumn of next year.

But a decision will now rest with the Government. Though there are hopes of interesting employers in providing sponsorship for the scheme, some financial commitment from Whitehall will be needed.

If the scheme does begin in 1987 it may be linked with a new access system currently being piloted by the MSC. Prospective students would be able to gain information on courses available from the College of the Air via a local computer terminal.

The MSC has envisaged in the pilot schemes that the database would provide information about provision locally and nationally. Computer terminals would be sited in libraries, banks, and jobcentres.

Research gain in science loss

by Felicity Jones

Goldsmiths' College stands to lose most of its sciences if the college accepts proposals which were approved in principal this week by London University's academic council.

The college has been warned that it will have to accept the university's terms and disperse much of its sciences to five teaching sites if it wishes to become a school of the university.

Informal discussions have already taken place with Royal Holloway and Bedford New College over the life sciences.

Undergraduates on the biology, biology with chemistry and two combined degree courses would be affected by the merger and teaching and technical staff would also be involved in the move.

The fate of the earth science subjects involving first degrees in geology, geology with chemistry and a combined degree in geology with biology could involve dispersal between three sites.

Any decision about staff and student redeployment is further complicated by the review in progress of the ways in which to strengthen departments of biological science within London University.

Dr John Newbery, new dean of Goldsmiths' schools of science and mathematics, said it was a worrying time for the staff within the faculties who view any moves with "mixed feelings".

"Most recognize the logic behind the planned dispersal but regret the loss of newly acquired laboratories here," said Dr Newbery.

Colleagues, however, welcome the opportunity to move into larger research departments which are better equipped and provide the opportunity for inter-disciplinary work.

London University's academic council which met this week commended the report of the working group into Goldsmiths' future.

Student taken off the war

by Patricia Santinelli

Proposals designed to [illegible] the education, training and [illegible] the nursing profession [illegible] this week by the United Central Council for Nursing, [illegible] ery and Health Visiting.

The plans which are [illegible] report *Project 2,000* could [illegible] motion by 1988 if they are [illegible] Government. Detailed [illegible] with ministers are to [illegible] following consultations.

The council envisages a [illegible] common foundation as part of [illegible] year training programme [illegible] the creation of a new [illegible] "practitioner". This would [illegible] current complex grades and [illegible] training.

During this training, students [illegible] not be counted as part of the [illegible] Currently there are more than [illegible] nurses at all levels in training, [illegible] per cent of them contribute [illegible] nursing and midwifery staff [illegible] als. Instead of a salary they [illegible] receive an NHS training grant.

The nursing council is not [illegible] about where the training should [illegible] place. This has been left up to the [illegible] UK nursing boards. But the [illegible] does recommend close links [illegible] leges and universities at all levels, [illegible] an end to the isolation of a majority [illegible] nursing students from their colleagues.

Mrs Audrey Emerton, chairman of the UKCC, said that the proposals were both radical and realist, representing a once and for all look at [illegible] once and for all thinking.

The council is hopeful that its proposals will answer some of the criticisms levelled at the deficiencies in the training of nurses, such as the erosion of student labour, confusion between service and education, and the wastage rate with only 65 per cent of students qualifying as nurses.

For these reasons the two-year common foundation is to be embedded in health rather than illness, provide a mixture of theory and practice and give the students a mixture of experience.

In their third year students would be able to branch into five different areas – mental illness, mental handicap, adult care, child care and midwifery.

More specialist training would be offered to those who intend to become health visitors, or take up occupational health nursing, community psychiatry and so on. A new helper to be called an aide would assist nurses in the community and hospitals.

Project 2000 from the UKCC, 23 Portland Place, London W1. Cost £5.00.

Voices raised in qualified concern

Concern over new proposals to standardize vocational qualifications was voiced from two quarters this week.

Criticism of the plan to extend the scheme to embrace qualifications at senior professional levels came from the Engineering Council, while broad support for the new framework was lent by the National Association of Teachers in Further and Higher Education.

In a response to the *Review of Vocational Qualifications* NATFHE welcomes the proposals, but questions the exclusion of GCSE and A level examinations from the new system.

The association also suggests a re-examination of the four levels of qualification proposed by the review working party, and demands the introduction of a higher education level of recognition.

A wholly different view comes from the Engineering Council, which condemns plans to measure the value of senior professional awards as "a quite unnecessary layer of bureaucracy".

Currie provokes more heat than light

David Jobbins

Edwina Currie: battling on

As a show-stealer Mrs Edwina Currie, Tory MP for South Derbyshire and Sir Keith Joseph's Parliamentary private secretary, has few rivals.

Her detailed answers during a *Question Time*-style panel at London's Queen Mary College invariably lasted longer even than the convoluted questions posed by academics in the audience. And what they lacked in brevity they more than made up for in provocation.

Shrill gasps greeted her reply to a professor of English worried not only about unemployment among his ex-students but about his own three children, still on the dole after graduating.

"We have been investing in people who clearly do not match what is needed in the outside world," she told her audience who clearly felt that the option of limiting numbers of arts graduates verged on heresy.

"I did philosophy . . . I am one of those vague queer people," she continued to more gasps of astonishment. "Is it right to continue to invest in courses which produce people who do not get a job?" (More protests)

It was a fitting finale for Mrs Currie, who had exhibited considerable care in her answers to awkward questions about possible university closures and the shrinking value of the student grant during the hour-long meeting.

On most issues Mrs Currie was on her own – or nearly so. Of her fellow panellists only the *Daily Telegraph*'s education correspondent, John Izbicki, came close to agreeing on occasion. The others, Social Democratic Party education spokeswoman Mrs Anne Sofer and – for the Labour Party – Professor John Beishon, director of North London Polytechnic, argued their different variations of expansion with strings.

Even on university closures Mrs Currie was less demonic than her popular image – the impact of the 1981 cuts on institutions such as Salford and Aston had been savage and closures were out, but collaboration, particularly between universities and the public sector, was in.

The University Grants Committee was a changed animal, she believed. Its imminent letter would, she hoped, push the better departments into expansion and "hit those departments which are not satisfactory very hard."

A pitch for consensus – no one wanted to see students drawing social security benefits in the longer term – was shortlived. It exploded when she delivered her own panacea – the mixed grants and loans system favoured by Sir Keith. But everything was still in the melting pot on student finance, she declared.

Sixty minutes and a bare half dozen questions covered and the session, organized by QMC's branch of the Association of University Teachers was over. Staff and students returned to their lectures and Mrs Currie was off to another political battleground.

No more cash for tech council

The Council for Educational Technology is to continue being funded by the Government, for the moment, but its grant will not be increased. The decision was announced this week by the Secretary of State for Education, in a letter to Mr Donald Grattan, chairman of the CET. It follows a review of the council undertaken last year.

Sir Keith Joseph says he is not satisfied that an increase in the council's resources is justified under current circumstances – its grant in 1985 was £758,000. On the contrary, he points out that according to calculations undertaken during the review there should be at least £150,000 left over for the council to carry out development work in fields where other bodies are not active.

In future CET will be controlled by a smaller council – at present there are 34 members – with members nominated by the Secretary of State.

Engineering shortfall 'a tragedy'

Steps to remedy a likely shortage of graduate engineers in Britain have been set out in the House of Lords by Social Democratic peer Lord Kirkwood. He suggested that:

- more resources should be made available to attract science graduates into secondary school teaching;
- extra grant should be given to students who enter disciplines identified by Government and industry as areas of short-term shortage.

In his maiden speech in the Lords, Lord Kirkwood, a senior lecturer in metallurgy at the University of Sheffield, linked the poor demand from students for engineering places on the plummeting numbers of science graduates entering teacher training.

Commenting on the low demand for science and engineering places and the high level of unfilled vacancies in some departments, he said: "I refuse to believe that we as a nation are inherently less gifted than others in these subjects or potentially less capable of being enthused by able and dedicated teachers.

"This connects with the problem of the supply of graduate teachers to schools. This has the makings of a tragedy for the whole of education, the size of which is only beginning to emerge."

Lord Kirkwood: maiden speech

Describing figures produced by Sheffield's careers advisory service which detailed the drop in graduates entering teacher training, he said: "The implication of these statistics is appalling. The fact is that science graduates simply to not want to go into secondary school teaching because the morale of the profession is at an all-time low.

The only solution was to find resources to reward good teachers and attract graduates, particularly in maths and science, into the profession.

Clear signals had also to be made to change attitudes to engineering as a career, and he called for a premium on the grant to students entering appropriate subjects.

For the Government, the Earl of Swinton confirmed that recruitment to secondary teaching courses in science and technology had been poor – and warned that applications so far for 1986 also told a "disappointing story".

He pointed out that ministers had launched a bursary scheme worth £1,200 a year on top of the normal grant for students entering one and two-year courses in maths, physics and craft design technology.

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Headmaster carpets principal over exam requirements

Universities are too rigid in their entrance requirements, Heriot-Watt University's principal, Dr Tom Johnston, admitted to Scottish secondary school headteachers last week.

But he was immediately challenged by a former member of his university court, who claimed that Heriot-Watt was one of the major offenders.

Dr Johnston told members of the Headteachers Association of Scotland: "If we are serious about wanting to bridge the gap between those who leave schools with little in the way of qualifications and those who do much better, universities must look more seriously at the range they regard as admissible." Pressures on resources created a vicious circle by forcing universities to raise their requirements, which then imposed new demands on schools.

But Mr John Grant-Wood, head of Edinburgh's Tynecastle High School, said Heriot-Watt was one of the universities which refused to recognize the new pass marks in standard grade, particularly in maths, recently introduced into Scottish schools.

And Mrs Margaret Macintosh, head of Edinburgh's Drummond High School, complained about the stranglehold on the curriculum which the universities exercised through the Scottish Examination Board.

"The system actually deters youngsters from going into higher education because it sets up hurdles at which they fall."

ANTICS

No mercy for Clement

The Liberals' education spokesman Clement Freud has been criticizing a single planning and funding body for Scottish higher education as having little going for it "other than Brownie points for Scottish parliamentarians."

He should be getting a call soon from Chief Brownie David Steel reminding him that the Scottish Liberals passed a motion welcoming the single body at their conference in March.

Shuffling off

A week is a long time in Malaysian politics, too. British journalists who missed minister of education Datuk Abdullah Badawi at the opening of British Education Week in Kuala Lumpur were offered a second chance at the end of the exhibition.

On arrival at his office, they were startled to find him packing up his papers and announcing that he had just been made minister of defence in a Cabinet reshuffle.

An hour before the polls closed in last week's regional elections, a breathless party worker doorstepping the electorate in a university town was flabbergasted when one citizen explained why he was abstaining. "I'm timing my inaugural lecture and my stop watch tells me I'm only seven minutes into it."

Nicky's farewell plans scotched

Last week's Burnham Committee meeting, which finally settled the teachers' pay dispute, proved an historic swansong for Mrs Nicky Harrison chairing the Council of Local Education Authorities, but it looks to have robbed her of a more sociable farewell appearance.

Friday's meeting of the committee of the National Advisory Body, where she has led the metropolitan authorities throughout the NAB's existence, was to have been her last public meeting, and the order had been given to get the whisky out. In the end, Burnham took priority, and by the time the NAB meeting is arranged, Mrs Harrison will no longer be a councillor.

Currie's hot tip

Sir Keith Joseph's departure from his post as Secretary of State for Education and Science could be announced over the Bank holiday weekend according to South Derbyshire MP Mrs Edwina Currie, speaking before a *Question Time* style panel at Queen Mary College, London.

Not only should she know, as Sir Keith's PA, but she has a direct interest – her appointment ends with the Secretary of State's removal.

The conspiracy theory must be gaining ground at the Committee of Vice Chancellors and Principals, which has just suffered its third burglary in six months. Its new press supremo Auriol Stevens is now missing her direct-line telephone. Perhaps someone feels there should be no secrets within the CVCP . . .

Course horse

Peter Brooke may have moved on from the Department of Education and Science, but one important point of contact with higher education remains. He was at Derby over the May Day bank holiday to see his eldest son, Jonathan, a second year student at Balliol College, Oxford, win the British Universities' 3,000 metres steeplechase.

China's roving ambassador

Personal File.....

by Carolyn Dempster

If the average Swedish citizen is better read in modern Chinese poetry and verse than the average Briton, it is not entirely surprising. Sweden boasts one of the finest translators of Chinese literature in the world – Professor Goran Malmqvist, head of Chinese studies at Stockholm University, a member of the select Swedish Nobel Academy, and currently on an extended study trip in the UK at the invitation of St David's University College, Lampeter.

A dedicated translator with several volumes, and prizes, to his credit, Professor Malmqvist nonetheless views this aspect of his busy life as a pastime, a therapy to be pursued when the bulk of his daily teaching and research duties have been completed.

"I also feel fairly strongly that if one knows a language that does not have common currency, such as Chinese or Persian, one has a duty towards one's fellow countrymen to enable them to partake of it," he explained.

Integral to his translating philosophy, and arguably his success in converting Chinese literary works of art into difficult Swedish syntax, is his belief that what can be expressed in one language can always be expressed in another, and no matter what period the poem or novel, it should be translated into the "living language of the translator's time".

Equally he believes that extreme care should be taken to render the original feeling of a work. "When you translate something there is really established a pact between you and the writer. He may have been dead for 2,000 years, but you have to serve him as best you can."

Little of modern Chinese literature has been translated into English, says the professor, and some of what has been translated has been done poorly. He sees this as symptomatic of the difficulties Chinese studies is experiencing in a number of countries, Britain among them.

"There is a tremendous need for knowledge about China in the world, yet Chinese studies is under threat in this country – apparently because of Government cuts in the humanities," he pointed out.

As a former lecturer at London's School for Oriental and African Studies, Professor Malmqvist is no stranger to the UK and has maintained a keen interest in developments. He returns on an annual basis to his Hammersmith Bridge flat and has kept in contact with many of his former academic fellows.

Two examples he cites of the decline of Chinese studies since the 1950s are Cambridge's hesitation "for quite a number of years" over whether or not to appoint somebody to the chair of Chinese Studies when it fell vacant, and the gradual decline of the SOAS as "a great establishment of scholarship" in the field.

From a broad perspective it would be a great pity to lower the profile of Chinese studies within the humanities as a whole, he says. "Any government who did that would certainly pay for it in future."

Professor Malmqvist's interest in China and Chinese literature dates back to his early academic career as a classics undergraduate. Realizing astutely that he would probably not get a tenured position in classics, he developed his interest in Chinese philosophy, was awarded a Rockefeller scholarship in 1946 to spend a year in China and one year at Berkeley, but "I saw to it that I got stuck in China in 1948" he recalls.

Because of his subsequent appointment as cultural attaché to China for Sweden in 1956/7/8 and frequent visits to the country as a result of his wife Ningstu's family connections, Professor Malmqvist is in an ideal position to comment on China pre and post-revolution. "In fact I'm one of the few people who can compare conditions in China in the 1940s and 50s with the situation now," he states emphatically.

In the 1940s, he recalls, there was widespread poverty and squalor, the streets were "filled with syphilitic beggars and people without faces". One of the first things that struck him upon his return was how bureaucratized things had become. Even the word "masses", formerly a word of honour had changed its meaning and become a derogatory byword. The gulf between the leaders and the led was huge.

Although the People's Republic of China has a history of 39 years, half of these had been "mis-spent" with leaders taking the wrong decisions, he describes as a "reign of hooligans" who were followed by narrow-minded incompetents.

Many of his translations are of the poets who belong to the "lost generation" of the cultural revolution: members of the Red Guard who fought on the battlefields before they saw the error of their ways.

GORAN MALMQVIST: no stranger to Britain

More power to the polytechnics

Polytechnics are being given increased freedom to register higher degrees on behalf of the Council for National Academic Awards as part of a continued devolution of power by the validating body for the public sector.

The latest is Trent, whose research degrees committee will be able to register higher degrees on behalf of the CNAA.

The move was welcomed by Professor Keith Short, chairman of the committee, as a "major step forward in the polytechnic's maturity".

The committee rather than the CNAA will now register MPhil degrees and MPhils with the possibility of transfer to PhDs direct.

● Sunderland Polytechnic is to offer an MA in modern literary studies, only the second of its kind to be approved by the CNAA. Focusing mainly on fiction and drama, it will take three years to complete – two years of part-time tuition and one year writing up a dissertation.

A satisfied rider crashes out after cycling 60 miles to help buy bikes for Nicaragua. Jeremy Wallis, from the Institute of American Studies at the London School of Economics, was one of 1,200 cyclists who rode from Ealing Commoon to Oxford Polytechnic hoping to raise £25,000 for the project.

Brush-up-skills course 'is failing illiterates'

Concern is mounting in basic education about the action of the Manpower Services Commission in withdrawing its support from full-time classes for unemployed people with serious learning problems.

Anxiety is being expressed that the policy which the MCS appears to have adopted will now lead to the development of a small hardcore of unemployable people, who lack even the most basic reading and writing skills.

Though some second language courses for ethnic minorities are continuing, literacy groups throughout the country have expressed alarm at the recent decline in MSC support for full-time preparatory courses in basic skills, which until now have helped unemployed adults with serious learning difficulties to undertake a period of intensive study prior to moving on to the more orthodox vocational courses sponsored by the MSC.

The decline in full-time MSC provision has become so marked that the Adult Literacy and Basic Skills Unit has written to the MSC chairman Mr Bryan Nicholson asking what form of consultative machinery is available to examine the issue in greater detail.

Tutors in basic education are concerned that the only option for unemployed adults with severe literacy and numeracy problems will be the two-hour-weekly evening classes funded by local education authorities.

Four years ago approximately 3,500 students were undertaking studies on full-time courses of about 18 weeks duration. Since then the number of such courses has been cut, and the length of those still in existence shortened to about 13 weeks.

ALBSU's director Mr Alan Wells explained: "Initially the courses were aimed at students who had serious literacy and numeracy problems, but reduced it has proved difficult to retain this type of student. Inevitably the courses have tended to drift up-market. They have begun to take those people who experience difficulties, but who are not total non-readers, they have become little more than brush-up-your skills courses. It is this aspect which is causing most concern."

ALBSU has been collaborating with the MSC on six development projects in which basic skills tuition has been incorporated into work preparation courses.

Two of these projects have been established on a full-time basis, offering 20 weeks of tuition, and the results are expected some time this summer.

"We feel there should be a range of courses, not necessarily full-time provision, designed to meet the needs of people at all levels of attainment," Mr Wells said.

Though the unit has no statistics to support its case for full-time provision for those with serious learning difficulties, it anticipates that up to 150,000 unemployed people may fall into this category.

Freedom Bill is silenced

by David Jobbins

A Conservative attempt to bring calm into the through legislation has been and his Bill now stands to becoming law.

Mr Fred Silvester, MP for ton, hoped that his Freedom in Universities Bill, embarked on its second Commons last Friday.

But other private measures tion occupied all the time when the House was prepared to give the Bill second reading several MPs

It has now been rescheduled debate on July 4 – but in the of opposition to the Bill, which have placed a duty on university polytechnic authorities to freedom of speech with certain specified exceptions, it is not certain to fail.

Mr Silvester hoped that would have given the Government opportunity to say whether tary codes adopted by vice-chancellors and polytechnic directors were dered enough to stem the tide incidents in which speakers, right-wing Conservatives, have with left-wing demonstrators.

But Mr Phil Woolas, president the National Union of Students, fended the "no platform" policy rapier specifically directed at ing racism.

It was not an end in itself but a serious attempt to tackle racism particular in education.

He told an NUS conference: "Our idea is to promote democracy and protect free speech. Preaching the right racist and fascist groups is an absolute duty for student bodies.

"For Mr Silvester the alleged question of freedom of speech is somehow to be debated in a rarified academic parliamentary atmosphere. I would he would take the same view if he was a black of Asian student on one of the National Front's infamous hit-and-

Bigger shift across the great divide

by Peter Aspden

Universities and public sector institutions are showing an increasing willingness to co-operate across binary lines even though there has been little discussion of formal links among university senates and councils, claims a report by the Conference of Registrars and Secretaries.

The registrars' group set up a working party to look into various aspects of collaboration, including formal consortium arrangements such as affiliation and validation, and practical examples of co-operation.

The report says that working relationships between universities and polytechnics have increased markedly over the last three years, particularly where institutions are close to each other and senior officers hold regular meetings.

Among the most popular areas for co-operation are continuing education, joint research projects in science and engineering, and the shared use of library facilities.

But the report significantly adds that few institutions have yet reached the stage where the development of transbinary links has been discussed at a formal level, although there have been statements of future intentions in some cases.

The report comes out at a time when the proposed merger between Keele University and North Staffordshire Polytechnic has reached something of an impasse. A working party report urged the creation of a new University of Staffordshire, but the polytechnic is worried that such a move would threaten its identity.

But the registrars' group remains optimistic about transbinary developments, hoping that its report will act as a stimulus to further co-operation and discussions.

Migrant students affect Ulster economy

Carmel McQuaid

ew report by the Northern Ireland nomic Council urges that a full estigation be undertaken into the ious effect on the Ulster economy of number of Ulster students who opt go to university in Great Britain. *The Demographic Trends in Northern Ireland* shows that it is the most students who choose mainland versities. In 1984 the average A el grades of Northern Ireland students entering higher education outside the province was markedly superior to those who enrolled at Queen's and the University of Ulster.

It is feared that many do not return. This represents a serious haemorrhage of the more able of the younger generation," the report states.

Not all disciplines are being creamed off, however. Medical students at Queen's tend to be better qualified than Northern Ireland entrants to medical schools elsewhere in the UK, while the grades of those admitted to electrical engineering, law, accounting, business studies and economics at home are on a par with those gained by students who leave.

The sheer numbers involved in the exodus – which in 1984 equalled 54 per cent of the new undergraduate intake at Queen's – did give rise, however, to concern on other grounds . . . "not so much because of opposition in principle to Northern Ireland students attending universities in Great Britain, but because the counterflow dried up in the early 1970s".

The whole issue cannot be divorced from the poor economic prospects in Ulster, allied with the uncertainty created by the civil unrest, adds the report.

The report also takes issue with projections last year by the Department of Education and Department of Finance and Personnel, which saw the *number of total university entolments* in the province remaining constant to the end of the decade. The author Dr Paul Compton argues that many of the ten factors on which the official projections were based are changing in a way that, on balance, *will push demand* upwards.

No account has been taken of social class, where the decline in the number of 18-year-olds has not been evenly spread. In social classes three, four and five, the number of 18-year-olds has already peaked and will drop by a third by 1996. But since births to social class one, two and three parents have increased from about 29.5 per cent of the total in 1970-71 to 36.2 per cent in 1983, the number of 18-year-olds in these social classes will continue to rise slowly until the end of the decade.

This is the group to which the most, 64 per cent of higher education applicants and entrants belong. Candidates from these backgrounds are also by far *the most successful* at A level.

Dr Compton also questions DENI's assumption that the percentage of girls *in higher education will remain at* current levels. No allowance has been made for the pressure being put on *girls by schools and parents to compete* on a more equal basis with boys, especially in science and engineering.

An even more crucial factor in local demand stems from the changing composition of the Northern Ireland *population. The Roman Catholic* proportion, growing sharply over the last two decades, is beginning to have *an impact on the make-up of the* 18-year-old age group. The proportion of Catholics going to local rather than Great British universities is substantially higher than for Protestants.

"*Demographic Trends in Northern Ireland*" by Dr Paul Compton. Published by the Northern Ireland Economic Council.

Liberals happy with UGC

by Olga Wojtas
Scottish Correspondent

The Liberal Party does not wish to change the University Grants Committee and has no plans to regionalize higher education.

This was revealed by MP Mr Clement Freud, Liberal education spokesman, in the latest interview conducted by Mr Ray Frotman, director of information services at Edinburgh University, under the auspices of the Standing Conference of University Information Officers.

Mr Freud agreed with Labour criticisms that the UGC was over-secretive, but said that the committee had been set up to look after its own and was doing a fair job.

"I like the concept of the arm's-length principle of the UGC; we would do nothing to change it," he said, adding that it would be a mistake to devolve higher education until there was genuine regional government.

Mr Freud dismissed proposals from the Scottish Tertiary Education Advisory Council for a single planning and funding body for Scottish tertiary education, and said that he had found during his six years as rector of Dundee University that the UGC had served it well.

"A nation of our size can manage on one university sector and not divide it up and spend more money on administration, when so much is needed for teaching," Mr Freud said.

Academic tenure should be maintained, partly to compensate for poor pay, as well as allowing lecturers political freedom.

"On balance, as I frequently say to Keith Joseph about secondary schools and primary school teachers, if you can't give them the right amount of money, at least be nicer to them; tenure manifests an element of care for the teaching profession which we would be unable to replace in purely financial terms."

Sir Keith, Secretary of State for Education and Science, felt that no more could be done for higher education until the economic climate improved, but Mr Freud said there could be no improvement in the economic climate until the country increased its investment in the tertiary sector.

"It is mega-foolish to put a monetarist in charge of a spending department of government," he said.

The universities should be less of an ivory tower, and more an integral part of adult life. "We would experiment with the three-year course and see whether there is not a good argument for a two-year course or four-term year. We would encourage sandwich courses.

"We want to take a very careful look at university entrance qualifications and see whether one cannot perhaps use the new two-year Youth Training Scheme as a qualification for entering universities."

Mr Freud added that there was no question that polytechnic graduates achieved their goals at a very much lower cost than university graduates, and suggested that there should be some blurring of the division.

"I'm not a tremendous believer in looking at the unit of resource and saying these must be the same, because they are doing different things under different circumstances, but I am a great believer in level funding, and a great believer in looking retrospectively at the value we get for money."

Feminists' winter of discontent

by Nina Hall
Science Correspondent

Women scientists will not be allowed to winter over in the Antarctic with their male colleagues. Dr Richard Laws, director of the British Antarctic Survey, has affirmed. Nor will they be allowed to sleep in the same tent as the men on field trips.

At a meeting last week with Baroness Platt, chairman of the Equal Opportunities Commission, Dr Laws pointed out that the survey was operating within the law in insisting on these restrictions. The Equal Opportunities Act allows for certain jobs to be restricted to men if there are inadequate sleeping or sanitary arrangements.

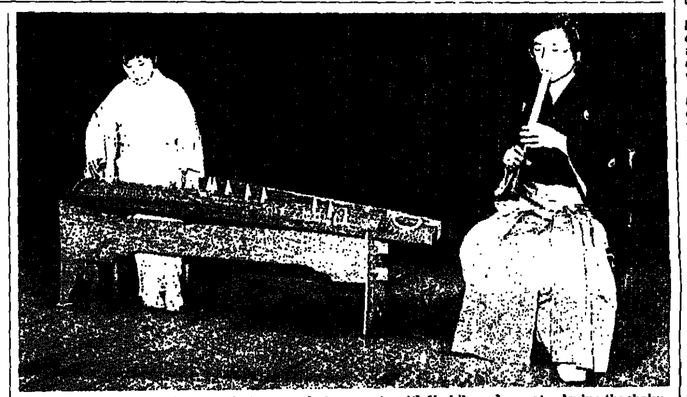
The survey has five bases near the South Pole which operate all year. These include Halley Base which is open to supply ships only five months of the year. During the winter there are no direct links with the outside world other than via radio and satellite communications.

According to Dr Laws, since appointments at such bases are for two years it is not suitable for women to spend such a long time in isolation with a group of 20 or so men. Fearing for the psychological well-being of the men, Dr Laws says that he does not want to introduce "another variable" into an all-male community because "it could have unpredictable consequences".

"I feel a great responsibility for the careers and the welfare of the men," he said. "Posts have to be restricted to men in some of the survey ships because only single cabins are available, for the same reasons."

The same rules do not appear to apply to other women nationals also involved in scientific studies around the South Pole. American, Australasian and Polish women researchers all spend periods of several months in their countries' Antarctic bases. Argentinians and Chileans even maintain families at their stations "for political reasons", points out Dr Laws.

Until 1974 no women were allowed in the Antarctic at all.



Two virtuosi of classical Japanese instruments last week gave a recital at Stirling University's Macrobert Arts Centre.

Kinuko Shirane (left) is seen here playing the koto, one of the oldest Japanese musical instruments, with Yoshikazu Iwamoto playing the shakuhachi or Zen flute.

The Japan Foundation was the major sponsor of the concert, which was organized by Dr Brian Bocking, lecturer in religious studies at Stirling.

How cops are robbed of the facts

Police officers are more likely to remember details of an incident than members of the public – but they are also prone to report plausible "facts" which did not happen, claims a psychological study published by Kent University academics.

The study by Mr Noel Clark and Professor Geoffrey Stephenson looked at the way in which 67 police officers wrote up an interview in their notebooks, and compared their performance with students on the same task.

It found there were important differences in the way the interviews were reported. Ordinary members of the public were more likely to be "story-tellers", who tried to make sense out of a narrative, while police officers tended to be "script-writers", producing a list of who said what.

The study said that both ways of remembering were likely to lead to errors; the script-writing approach was better for recalling more details of an event, but it was also likely to include things which did not occur, but were thought to be plausible.

Mr Clark said the listing method which officers were encouraged to use had some advantages, but they were not sufficiently trained in the technique, and might not be aware of the errors to which it could lead.

He said several constabularies had already shown interest in the Kent report, in order to improve police training and – ultimately – the quality of police evidence in court.

Silent management finds a new voice

Proposals for a new professional organization to represent the views of senior managers in further and higher education are to be put forward later this month.

The aim will be to create a group which will act as a mouthpiece for the sector, putting forward cogent arguments and formulating policy to be put to Government and other national agencies.

Discussions about the establishment of the new group will take place at the annual meeting of the Association of Vice Principals of Colleges in London on May 23.

Mr Wilson Longden, AVCP's secretary explained: "There are 6,000 senior managers within further and higher education, and their views are not being heard. Through such a forum ideas could be discussed and put forward to Government."

Part of the new group's intention would be to respond to developments, but it would also hope to assist its membership with advice on current issues.

"The whole idea would be to try to get a focus and a forum for a pro-active view of education, to stop the constant response to crisis which prevails," Mr Longden added.

Art courses up to scratch says HMI

Arts and design courses at Lancashire Polytechnic are effective, with special features attracting students from all parts of the UK, according to Her Majesty's Inspectorate.

Students on the BA in graphic design benefit from accommodation of a high standard with well-qualified specialist staff, and are generally well motivated and articulate, the inspectors found.

"A high standard of work is expected, and the majority of students achieve a satisfactory standard," the inspectorate's report says. Some of the creative work, particularly that related to sandwich placements, demonstrated an unusually high standard of inventiveness and maturity.

The report shows how placements have had a positive effect both on students and firms. Students' interest in design management is stimulated by time spent in industry, and companies have begun to take account of student contributions.

"Students benefit individually from the industrial experience but the continuous contact between the polytechnic and participating companies is equally important in providing the setting for the course as a whole."

Other courses offered within the faculty also pleased the inspectorate, with the four year fashion BA described as a "well-founded course that is still developing," with a hard working staff providing a good grounding in fashion design, cutting and make-up.

But it says there is a need for more experimentation in knitwear, and that staff must ensure that intellectual and academic demands as well as creative ones are "commensurate" with an honours course.

Although the accommodation for the fine art degree is "unfortunately" divided, the course is praised for its attempt to broaden the occupational horizons of its undergraduates by getting away from the traditional path of success or failure as assessed through gallery exhibition.

Specialisms could do better

Edgehill College of Higher education is successfully preparing students to become sound primary classroom teachers, but it needs to review its preparation for specialist teaching, says a report from Her Majesty's Inspectorate published this week.

The report is based on an inspection, part of a major investigation of teacher training across the binary divide, which took place during the summer of 1983 and autumn 1984.

The inspectorate says that the best subject study teaching is of outstanding quality. But it points out that although useful references were being made between all aspects of curriculum studies, teaching practice and classroom experience, there was a lack of reference being made between one component and another. Honours students need some sustained teaching experience in their fourth year to maintain contact established during the first three.

According to the report, the staff are well qualified academically, but now that the emphasis of training is on primary education, there is need for more primary school experience.

The report says that BEd students qualifications are satisfactory. In the case of PGCE students there is a good match between degrees and specialist subjects.

Chirac narrows elite college door

from David Dickson

PARIS

The Ecole Nationale d'Administration (ENA) – the prestigious post-graduate college which has become the main training institution for many of France's top government administrators, as well as a significant number of senior politicians – has become the centre of a new political row.

The conservative government of Prime Minister Jacques Chirac has announced that it intends to reduce by a half the number of students attending the college, in line with its general goal of reducing the power and influence of the state over France's economic and social affairs.

As a first step, it has announced that the number of places to be awarded in the highly competitive examination which students sit this summer for entry in the autumn will be reduced from 160 to 129.

But the government's moves have been criticized as elitist by the socialist opposition. It argues that reducing the number of places will reduce the opportunity for internal promotion within the civil service, for which ENA's two-year course offers one of the few opportunities, and that internal promotion is needed to alter the social balance of the top administrative group, which has traditionally been drawn from the middle and upper-middle classes.

The socialist party made ENA the target of one of its most controversial reforms when in power. This was the introduction two years ago of a new "entry door" offered to those working in local government or social organizations. Previously selection had been restricted to two categories, school-leavers and those already in the civil service.

Old boys . . . Jacques Chirac and Laurent Fabius

M Herve de Charette, the minister for public service, said in Paris last week that the government had no plans to abolish this new "entry door", although it was currently being considered. At the time, the reform was strongly criticized by the conservative parties – then in opposition – as introducing social criteria into a selection process which, they said, should be based solely on intellectual performance.

Another controversial reform which, for the present at least, is being left untouched is the decision to reserve a small number of places each year for top graduates from the Ecoles Normales Superieures, a move which was introduced to help boost the declining attraction of these latter institutions to students.

M de Charette said that the decision to cut the number of graduates produced by ENA was the result of the government's desire to reduce the weight of heavily centralized administration, as well as the major disparities within the civil service between ENA graduates and other government officials.

So far, the powerful association of ENA graduates, who currently number over 4,000, has not made any public statement on the government decision. Among its members are both the current prime minister, M Chirac, and his predecessor, M Laurent Fabius.

Pay cuts herald island exodus

by John O'Leary

Singapore is facing the prospect of an exodus by expatriate university lecturers, who constitute more than half the staff of the island's two degree-level institutions, after pay cuts amounting to 16 per cent.

As a response to recession in the island's economy, employers' contributions to the central provident fund, the equivalent of National Insurance, have been reduced from 25 to 10 per cent of salary. And an incentive bonus of half a month's salary per year has been scrapped by the National University of Singapore.

In addition, the government has imposed a pay freeze and is considering widening the order to include annual increments, which would mean the loss of a further 5 to 10 per cent of earnings expected by expatriates in the course of a three-year contract.

Although the measures affect all staff, the expatriates are worst affected. Singaporeans have been told that the cuts are a temporary expedient which should last no more than two years, but the restoration of full pay would come too late for the expatriates.

High government contributions to the Central Provident Fund are among the main attractions for lecturers considering jobs in Singapore. Employees are obliged to pay in 25 per cent of their own salaries (a percentage which has remained unchanged despite the reduction in employers' contributions) providing a hefty lump sum at the end of three years.

Even after the cuts, most are still better paid than in other countries. But some face financial difficulties, having set their contracts on the basis of contracts signed years. British expatriates are suffering from the strength of the pound against the Singapore dollar.

Some expatriates are seeking advice with a view to using breaches of contract in their contracts to escape. Few believe they would have a chance of success in the courts of Singapore.

Expatriates make up about 60 per cent of the staff of the National University of Singapore, and almost two-thirds of the staff of the Nanyang Technological Institute. Academics have lodged protests, but a recent letter from a group of these institutions to the government expressed fear the government might restrict access to the terminal grant on completion of contracts if they continue their protests further.

The letter added that the threat of financial penalties for non-renewal of contracts, which would prevent many from leaving the country. However, the cuts have also persuaded some not to renew their contracts at the end of three years.

Neither the ministry of education nor the National University of Singapore agree to be interviewed last week. But Tan Soon, president of the NTI, Dr Cheong Soon, said that no staff were being sacked as a result of the cuts.

He added that, although it was unfortunate that such measures had to be taken, Singapore salaries remained internationally competitive. Many of the expatriates were receiving salaries three times as much as they could expect at home, he said.

Newspaper attack leaves an unhappy band of pilgrims

A leading Polish newspaper, *Zycie Warszawy*, (Warsaw Life), has republished an attack on a Polish students' pilgrimage, which appeared almost 50 years ago.

The pilgrimage, known as the Students' Pledge, took place on May 24 1936, at a time when Poles felt themselves to be under threat from an increasingly ominous economic and international political situation.

In a gathering at the national shrine of the Virgin Mary at Czestochowa, the students committed themselves to a renewal of spiritual life and the intention to live as morally responsible individuals.

The tenor of this event, to judge from reminiscences of participants was essentially the same as that of many such spiritual revival gatherings throughout the world, before and since. But it was marred by a few right-wing extremists, who exhibited quasi-fascist and anti-semitic slogans from the windows of specially chartered trains. Such demonstrations were in no way a part of the official pilgrimage agenda, and were vigorously condemned by the organizers.

The 1936 pilgrimage as such was, furthermore, also condemned by anti-clerical elements both from the left and the right. The latter, of course, are normally anathema to the current regime, but on this occasion the *Zycie Warszawy* article was prepared even to call upon spokesmen of the prewar "reactionaries" to bolster their condemnation of the "pledge".

For the annual students' pilgrimage to Czestochowa has become a feature of Polish student life, in spite of repeated attempts by the Czestochowa civic authorities to sabotage it by staging a simultaneous pop festival and book fair along the pilgrimage route through the town.

And, during the last decade, independent initiatives by Polish students have been increasingly protected by the church, which, for example, lends its premises for alternative education courses.

In October 1984, students from Warsaw Polytechnic carried their college banner in the funeral procession of the murdered Solidarity priest, Father Jerzy Popiyhuszko, and, just a year later, it was the parish priest of the Gdansk Polytechnic student Marcin Antonowicz, who disputed the official verdict that Marcin had "died after falling from a police van while drunk", saying that Marcin on principle never touched alcohol.

In this context the printing of the *Zycie Warszawy* article is not simply a matter of historical interest, similar to the "on this day" or "50 years ago" columns which appear in many newspapers throughout the world.

It is rather, the Polish students fear, the first pointer of a new campaign against students who attend church functions.

More Unesco job losses feared as Britain quits

Eleven professional staff members of the United Nations Educational and Scientific Organization have been told that they are losing their jobs as the results of cutbacks in the agency's budget made necessary by the withdrawal two years ago of the United States.

The eleven – who include a Briton – were among 400 staff members whose posts have been abolished in line with decisions taken last year at the general assembly in Sofia.

The rest either have been found new positions within the agency, or have been able to reach agreement over the termination of their contracts.

It is feared in Paris, however, that since all the vacant positions have now been filled, absorbing the further 5 per cent budget reduction caused by Britain's withdrawal in January, that this will result in a much higher number of individuals having to leave.

Two of those who have been told that they no longer have jobs with Unesco are Mr Dragoljub Najman from Yugoslavia, previously assistant director general for development cooperation, and Mr Erwin Solomon, director of the division of socio-economic analysis.

Unesco's executive council opened its regular two-week meeting in Paris last week. The Soviet Union is expected to press its earlier demand that the contracts of US and British citizens working for the agency should be terminated before those of other nationalities. So far, however, this demand has been resisted by other member states, particularly those from western Europe.

The meeting of the executive committee is expected to accept a request from Britain to be given observer status in Paris. This status has already been granted to the US, which still maintains an observer mission to the agency based in its Paris embassy.

● Mr Kalevi Sorsa, Finland's Social Democratic prime minister, has expressed his willingness to take over the director-generalship of Unesco in succession to the controversial Senegalese-born Mr Amadou Mahtar M'Bow, provided he receives the full backing of the organization's Western member states. According to Nordic Unesco sources in the Danish capital, the Unesco ambassadors of the five Nordic countries – Denmark, Sweden, Norway, Finland and Iceland – who are actively campaigning for Mr Sorsa's candidacy, recently told Mr M'Bow that they wished him to resign from his post when his present period of office comes to an end in 1987.

Mr Sorsa, 55, Finnish prime minister since 1982, was a Unesco official in Paris from 1959 to 1965 when he was appointed secretary general of Finland's Unesco commission, a post he held until 1969.

Offer of a bed to woo Slav students

Yugoslavia's university of Kosovo to give special benefits, financial and priority ranking for [illegible] accommodation in the forthcoming academic year. This was revealed at the recent conference of the League of Communists of Kosovo, the first since the 1981 student demonstrations triggered a massive wave of pro-Albanian and anti-Yugoslav protests in the province.

Since 1981, Kosovo's ethnic Albanians, who form a majority in the province, have rallied to a spectrum of slogans ranging from the desire for Kosovo to be an ethnic and political Albanian republic within the Yugoslav federation, through total independence to incorporation into the mother Albania. All the desires are contained in what is officially described by party spokespersons as "the historic decisions of revolution, equality, brotherhood and unity, and our class and national identity."

Nevertheless, the growing wave of Albanian nationalism in Kosovo has led to a mounting flood of Slav inhabitants fleeing the province. Although there has been a heavy clampdown on all manifestations of nationalist violence, and a major purge of the university, which was seen as a focus for such sentiments, it has proved difficult to reconcile Slav and Albanian inhabitants of the province. Massive unemployment, particularly among graduates, only exacerbates the tension. The unemployed miss out on many social benefits available to those in work or studying.

One of the easiest ways for young Slav inhabitants of Kosovo to leave the province is to enrol in a university in another part of Yugoslavia. This gives a "natural" gloss to the departure. It does not necessarily suggest the young person is afraid of the Albanians.

To encourage Serb and Montenegrin school-leavers in Kosovo to complete their higher education in the province, all such students have been guaranteed financial credits and a place in the university's halls of residence. This, however, has clearly failed to halt the exodus. A drive to offer preferential conditions to Slav students willing to return to the troubled province is therefore the next step.

Relieving the loneliness of the long-distance learner . . .

from Geoff Maslen

MELBOURNE

Five Australian universities involved with distance education programmes have signed an accord that will broaden the range of subjects available to Australia's 20,000 external tertiary students.

The vice chancellors of Queensland, New England, Macquarie, Deakin and Murdoch universities have agreed to look at ways of rationalizing the provision of correspondence courses at the national level. Each of the institutions is a major provider of external study courses.

With a land area about the same size as that of the United States, but with a population 13 times smaller and located in some of the most remote areas in the world, Australia is an obvious candidate for "mailbag study". Correspondence courses have been available to primary school pupils for almost a century in some states but only in recent years has there been any marked increase in the provision of external subjects for those interested in higher or further education. At Deakin University, the youngest of the four in Victoria, a majority of the students are taking their degrees from home.

According to the director of external studies and continuing education at the University of Queensland, Professor John Chick, Australia's present national system of distance education was inefficient and outdated. Mr Chick said that distance education had been very much a hit and miss operation and the federal government had asked for a more coordinated system in terms of student enrolment patterns and the provision of subjects.

"The accord signed by the five vice chancellors is trying to address the problems of cost, inefficiency and duplication of subjects by bringing the universities together and asking them to look at areas of overlap as well as courses which are not covered at present," Professor Chick said. He said the result would be a healthier, more vigorous system which would benefit all external students through wider subject choice and fewer restrictions due to state boundaries.

The number of students enrolled in higher education through external courses has grown rapidly over the past 10 years. Some 800 subjects are now offered to the 20,000 distance education students. This is a much lower student-subject ratio than for students taking their degrees within an institution.

Professor Chick said that in recent years universities had tried to solve some of the problems of overlap and inefficiency by offering courses from other institutions. But there were significant difficulties in achieving a national system of distance education. There were real limitations, for example, in rationalizing distance education if universities were obliged to maintain the present quotas set by the federal government and tied to its funding.

According to Professor Chick, the chief advantage of distance education was that it enabled isolated students to study in a programme which otherwise would have been "totally inaccessible.

China urged to keep an open mind on the West

by Geoffrey Parkins

A debate among Chinese academics on the assimilation of Western culture and ideology reached a climax last week when a senior party official joined the call to "absorb the heritages, ideological and cultural achievements" of Western nations, as well as their science and technology.

Opening China to the outside world was not only important for the country's economic modernization, but also for its ideological and cultural development, Zhu Houze told a national congress of academics in Peking.

Zhu Houze, who is head of the propaganda department of the Communist Party Central Committee, added that no single nation could monopolize all the "advanced ideological, cultural, scientific and technological" achievements in the world.

Combining such achievements with Chinese national traditions would promote the country's modernization programme and enable the nation to create a spiritually advanced culture.

Thus, as one leading social scientist put it, the modernization drive has entered a second phase: modernization no longer meant only updating science and technology – "we are now appealing to the nation to modernize its system of values and mode of thinking".

The debate has been carried on largely in the Chinese press as well as at academic gatherings and at times has become very heated. But it has been marked throughout by an impressive degree of open-mindedness.

The dominant viewpoint is that while opening up to the science and technology and economic, commercial and managerial techniques of the West, it will be impossible to keep out the value systems like competition, freedom, creativeness, independence and respect of individual ability and opinion that come with them.

Chinese intellectuals should face the challenge of a changing world, neither "blindly worshipping nor belittling" either native or foreign cultures, but opening their minds to and accepting what is valuable in the ways of others.

While recognizing the reasons for China's former isolationism – namely the foreign intrusions of not too distant history – leading academics stressed the importance of cultural exchange, and their belief that the more exchanges one culture has with another, the more that culture will develop.

Cultural and economic progress had been held up in recent years by apparent ideological discrepancies, but while many of these had been cleared up there still remained much confusion surrounding apparent clashes between the concepts of "tradition" and "modernization".

The latter was often misinterpreted as an appeal to discard national tradition and betray the nation's pride in its past achievements. But, as noted scholar Gan Yang put it, this kind of thinking was the product of a misunderstanding by a whole generation of Chinese intellectuals.

In Gan Yang's view, tradition is not synonymous with the past, and it "includes even what may emerge in the future".

Body find sets space conundrum

from William Norris

WASHINGTON

Is it a black hole? Is it a cosmic string? Or is it, as one science fiction writer has suggested, merely an alien space ship using gravity to warp its way around the universe? Whatever it is, the discovery by Princeton University astronomers of a mysterious body halfway between Earth and the outermost edge of observable space has set the scientific community on its ear. They may be looking, they believe, at the beginning of time.

Although the object has not been seen directly, its discoverers estimate that its gravity is equivalent to a thousand large galaxies put together. Dr Edwin L. Turner, leader of the team of eight astronomers who made the find, reports in *Nature* that the discovery defies conventional explanation.

"The most conservative explanation," he says, "would be that it's a cluster of galaxies as large and dense as any we've ever seen. The problem is that we should be able to see such a big cluster quite easily in our telescopes, and we don't."

Evidence of the new object, gathered in early March with the four-metre Mayall telescope at Kitt Peak national observatory near Tucson, Arizona, is in the form of a double image in the sky. What seems to be two quasars – galactic cores so bright that they are visible even at the edge of the universe – is really just one. Spectral analyses of both images, in which their light is separated into its component colours, show that each has essentially identical component wavelengths. And previously known quasars (the first was found in 1963) are all quite different from each other in spectra.

"It would be too much of a coincidence for two quasars to be so nearly identical," says Dr Turner.

The theoretical explanation is that this double image – a kind of mirage in space – is caused by an intervening object whose gravity is so powerful that it bends the quasar's light, acting like a distorting lens. The phenomenon was predicted in Albert Einstein's theory of relativity half a century ago, and first proved to exist in 1979. Since then five examples of "gravitational lenses" have been found, but none has been as powerful as the Princeton discovery.

● This week the National Science Foundation revealed that Dr Mark Reid, a radio astronomer with the Smithsonian astrophysical laboratory in Cambridge, Massachusetts, has proved that the Sun is much closer to the centre of the Milky Way than was previously thought.

Using a geometric technique for the first time, Dr Reid estimates that the sun is a mere 23,000 light years from the centre of the Milky Way, as opposed to the 33,000 light years previously supposed. The new finding, which the NSF claims will have a profound impact on many aspects of astronomy, reduces the size of the milky way from 100,000 light years in diameter to about 70,000 light years.

Letter from Nicaragua

University admissions have been disrupted as students obey the call to arms

Students of the revolution

"To walk forward, we have to know where our feet are." This pragmatic metaphor to describe his university's research role is typical of Father Cesar Jerez, the Jesuit rector of the University of Central America in Managua, Nicaragua. He breathes optimism for the future of the Nicaraguan universities and their 25,000 students, despite the enormous constraints which the war with the American-backed "counter-revolutionaries" puts on the country's budget and human resources.

Like its counterparts in El Salvador and Guatemala, the Nicaraguan branch of the University of Central America was set up in the early 1960s, partly to break the state monopoly in higher education. Father Jerez admits that in the early years, these Roman Catholic-inspired universities were seen as an antidote to the "Marxist" ideas being promoted in the national universities. Soon, however, the fee-paying students at the UCA in Managua were in the forefront of protests against the Somoza regime, which was finally toppled in 1979.

The revolutionary Sandinista government immediately set out to overhaul the higher education system, to make it more suited to the needs of a poor, predominantly rural country. A university network of five institutions was set up: national universities in the capital Managua and the second city León; a national technological university; the UCA, and a polytechnic, which trains accountants, banking and commercial students, as well as offering courses in nursing and domestic science.

Father Jerez finds that his university can work harmoniously within this framework. "The state regards us with affection and respect. They think that Jesuits are good administrators and hard workers." In return for their hard work, the government covers the university's running costs. Since the students no longer pay fees, the other necessary funds come from international sources or from the Society of Jesus.

The position of the UCA with regard to the revolution is outlined in its constitution: "The University of Central America supports deep-rooted social transformation. Due to its nature, this support will be expressed at university level by means of a) teaching; b) research; c) the social involvement of the university; d) performing the role of a critical and creative voice in the course of this transformation; e) revalidating the cultural values of Nicaraguan society."

Father Jerez echoes this commitment: "We provide an independent forum for ideas: but we also know that there is no turning back of history, and any criticism we make is intended to improve the revolution, not to help overthrow it".

Silvia Villagra is one of the students who was expelled from the UCA in the 1970s for her opposition to Somoza. She finished her mathematics degree at the National University, and is now the dean of education there. The faculty currently has 5,000 students on the four-year course which will give them a degree to teach in secondary schools, the training of teachers being one of three priority areas in education, together with health and agriculture.

She is the first to admit that the last six years have been largely a question of trial and error, of rapid changes to adapt to new situations, as Nicaragua has tried to evolve its own coherent higher education system.

On top of this, the war against the "contras" has taken its toll. Over 50 per cent of the government budget is devoted to it, to the detriment of education and other areas. Many potential male students have to complete two years' national service between secondary school and university, which has meant that over the past few years about three quarters of the student population has been women.

Nick Caistor

Reading, writing and extra cash

Washington state, like so many others in America, has a huge number of illiterate adults. It also has a lot of would-be college students who cannot afford to pay for their higher education. Now the two problems are being brought together, in what state officials hope will be a match made in academic heaven.

The scheme is simplicity itself: the impoverished students are being paid under a work-study programme to teach adult illiterates how to read and write. The money they earn is used to put them through college.

Some 150 students have enlisted so far, and the number is expected to double next year. There will be no shortage of work, for official estimates claim that one in seven adult Washingtonians are functionally illiterate: unable to read the poison label on a can of pesticide or job advertisements in the newspaper.

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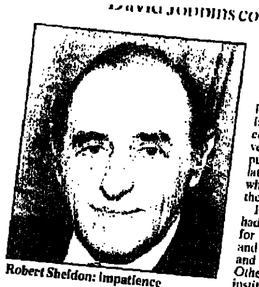
David Jobbins concludes our series on the aftermath of Jarratt by examining the watchdogs of higher education

The scrutineers



Robert Sheldon: impatience

Power House

Undeniably the most powerful outside body which has taken a close interest in higher education matters is the Commons Public Accounts Committee. Precluded from examining public sector higher education because of the local government connection, it has over the years been one of the most feared outside agencies by university administrators and academics.

Universities' books were only opened to PAC scrutiny in 1968, a step viewed with considerable apprehension over the traditional arms-length relationship universities had had with Government.

But fears that the traditional buffer role of the University Grants Committee would be impaired were proved unfounded, as were anxieties that all sorts of improprieties sanctified by years of near-total autonomy would be uncovered.

Using the then Exchequer and Audit Department as its fact finder, the PAC investigated the accounts of a large number of universities after the Comptroller and Auditor General completed a four-year tour – and gave the universities a clean bill of health.

Since then the PAC has examined aspects of higher education spending with a fine toothcomb. Investigations have covered such detailed issues as the adaptation and under-use of buildings at specified universities, unspent balances, and more recently the choice of Coleraine as the location for the New University of Ulster.

In the early 1980s the PAC concentrated on the Government's plans to cut spending on the universities and the planned redundancy compensation scheme.

That line of inquiry is being taken up by the PAC as part of its brief to ensure that reality matches expectations in implementing policy. The committee is expected to report to Parliament in the summer and all the signs are of scepticism that the Government got a good deal out of the scheme.

The PAC's chairman is former Labour Treasury minister Mr Robert Sheldon, who demonstrated not a little impatience when confronted by a senior official from the Department of Education and Science who was not prepared to accept criticisms of his department's inactivity over the redundancy scheme.

Much of the PAC's authority derives from the highly charged set-piece atmosphere surrounding its hearings, which has had right of access to universities' accounts – but not those of the polytechnics and other public sector colleges – since the late 1960s. At the outset there was considerable apprehension that the effect would be to drive universities away from their cherished autonomy, but no great scandals were found.

Now the Public Accounts Committee is seen as an increasingly important buttress for the beleaguered Universities' books were only opened to PAC scrutiny in 1968, a step viewed with considerable apprehension over the traditional arms-length relationship universities had had with Government.

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Now the Public Accounts Committee is seen as an increasingly important buttress for the beleaguered Universi-

Detailed scrutiny of the running of Britain's universities and other higher education institutions is no new development. The Jarratt inquiry and its public sector counterparts are only the latest in a series of outside agencies who have examined over the years how the system fits together.

Powerful committees of MPs have had access to the universities' books for years, while Government policies and spending plans have been analysed and ministers closely questioned. Other agencies have looked at the way institutions have handled public money, and like the Audit Commission, have made specific proposals for tighter financial controls.

Jarratt was of course the response to a political stimulus – the Government's feeling that universities were widely perceived as inefficient, self-indulgent and featherbedded.

After Jarratt it is clear that the universities have been largely cleared of that charge – much to the relief of the individuals who have monitored their activities over the years for the established watchdog organizations.

Pre-eminent among those is the Commons Public Accounts Committee, which has had right of access to universities' accounts – but not those of the polytechnics and other public sector colleges – since the late 1960s. At the outset there was considerable apprehension that the effect would be to drive universities away from their cherished autonomy, but no great scandals were found.

Now the Public Accounts Committee is seen as an increasingly important buttress for the beleaguered Universi-

Sir William van Straubenzee

ty Grants Committee rather than a threat to universities' independence.

A similar casing of tension is likely between public sector higher education and the Audit Commission, whose intervention at a critical point in last year's salaries negotiations provoked both management and unions, largely because of the way it was seized upon by Sir Keith Joseph, Secretary of State for Education and Science.

The main objection to outside intervention is that misunderstandings may give rise to critical long-term effects on institutions. But the longer the relationship the less this fear is likely to be justified, and the greater the expertise of the scrutineers. Management consultants are increasingly employed and many of the big names are building up an immense fund of experience in the arcane world of higher education.

In the institutions too, resentment has given way to the recognition that outsiders may spot failings which escape people closer to the subject, and that attempts to establish patterns are helpful to the process of improving internal efficiency.

The main watchdog bodies fall into two broad groups – those concerned with the implications of Government policy and spending plans and those involved in monitoring whether that public money has been spent in accordance with those policies.

Parliamentary committees span both roles. The one with the longest and most distinguished history is the Public Accounts Committee, which dates back more than 100 years although it is only since 1968 that it has had the power to investigate the universities.

Also in the parliamentary arena are the select committees which concentrate on Government policy proposals, the way public services are working, and spending plans for the future. Re-established only in 1979 they replaced the old subcommittees of the Commons expenditure committee but are larger and more prestigious.

But the greatest impact is evident with the National Audit Office and the Audit Commission, two quangos moulded out of existing organizations under the Thatcher Government and charged with the specific task of assessing central and local government's financial control mechanisms against a "value for money" remit.

Both organizations' predecessors had done studies of that nature, but it took legislation to make it a prime aim. Their existence has given teeth to the drive to inject greater efficiency and higher education squarely in their sights.

Sir Gordon Downey

Policing policy

The National Audit Office is investigative arm of the Commons Public Accounts Committee. It monitors spending by all Government departments and produces 30 to 40 reports a year to inform detailed investigations.

Most recently it has investigated redundancy and restructuring introduced to help slim down university staffing system between 1981 and 1984 – and its reports deeply critical of the Department of Education and Science for ignoring a series of warnings from the Commons Grants Committee that the cuts would cause serious damage, disorder and discontent.

Its main finding was that although the redundancy scheme allowed universities to keep within their imposed budgets, it led to serious imbalances between subject areas and a distortion of the age profile for university academics.

This report, the subject of two hearings before the PAC, is likely to result in a further report to Parliament which will be the subject of a debate on whether the Government's policy objectives were met.

For the NAO, like its predecessor, the Exchequer and Audit Office, is restricted to examining the implementation of policy rather than considering its merits.

The NAO was established under the 1983 National Audit Act. Until the officials from the old Exchequer and Audit Office were civil servants.

But it was felt that too cosy a relationship between the Whitehall spending departments and their auditor watchdog could impede critical faculties.

It is headed by Sir Gordon Downey, the latest holder of the key job of Comptroller and Auditor General in a long line of parliamentary officers, and is now strategically placed outside the Whitehall community.

But the key change in the 1983 Act was the specific reference to a statutory authority to carry out value-for-money studies – something which had previously been carried out with the consent of the spending departments.

The NAO picks general themes, either on its own initiative or at the instigation of the PAC. In most cases the investigations are carried out by its own staff but consultants are occasionally brought in to beef up expertise in complex cases. It has 15 divisions which correspond with the spending departments and each division will produce two or three important reports each year on top of its routine monitoring.

The reports are the result of discussion with the Government department involved – and it is at this point that the misunderstandings over its investigation into the redundancy compensation scheme began.

Its education reports have largely concentrated on the university sector – schools and public sector higher education fall mainly under local government spending which is the remit of the Audit Commission.

Although much of higher education in the public sector is centrally funded and only distributed through local authorities, the NAO's ability to examine its spending programmes are yet to be tested and a diplomatic line is well established with the Audit Commission.

Officials are reluctant to accept their work as carrying out post-mortem examinations of Government spending programmes but that is certainly the effect of their brief under the Act.

Appraisal by the select few

Policy questions and spending plans are scrutinized by the Commons Select Committee on Education, Science and the Arts.

The select committee system was reintroduced by the then Leader of the House, Mr Norman St John Stevas, in 1979 to improve parliamentary examination of Government policies. It replaced the old network of sub-committees of the expenditure committee, which lacked the back-up and resources to do the job properly.

Under its first chairman, the then Labour MP Christopher Price – now director of Leeds Polytechnic – the select committee launched itself into an ambitious programme of longer-term and parallel more limited investigations.

Equipped with parliamentary authority to send for "persons, papers and records" it has the task of monitoring the expenditure, administration and policy of the Department of Education and Science and associated public bodies.

That job proved far from easy – in its very first big investigation the committee complained bitterly that it was meeting obstruction in Whitehall and there was soon a constitutional row over whether civil servants could be questioned over their advice to ministers.

Although the committee's final report on higher education, produced in 1981, was far removed from

Sir William van Straubenzee

chairman, Sir William van Straubenzee, and a new style. Until its recent announcement of short sharp investigations of the student awards system and technological education, it has done very little on higher education, and its critics complain it is bogged down in primary education.

Besides its investigations, the committee regularly takes evidence from the Secretary of State and his officials in a single session devoted to a range of issues, and questions officials on the department's expenditure programme. There is no doubt that the sessions are less charged than in the last Parliament, and that its zeal has become diluted and less dynamic.

● Other select committees have become involved in higher education issues over the years – notably social services chaired by Labour MP Mrs Renée Short. Beginning with the 1982 session the committee carried out a series of investigations into the impact on medical services of the cuts in university budgets.

Its perspective was predominantly that of the effect on clinical activity within the National Health Service but it also considered how research was being affected. It concluded in 1985 that although the effect of the three-year cycle of cuts had been more than marginal it was less than grave, but confirmed its view, rejected by health ministers, that research had been affected.

Commission runs into local difficulty

Of all the outside agencies to examine what goes on in higher education, the Audit Commission has probably caught the most flak. Its report last year into further and higher education burst like a bombshell in a system that was already ready for the worst.

It was the concept of value for money that lay at the root of the controversy which developed over whether it was proper for "restrictive" practices to be presented as a barrier to educational opportunity for thousands of young people.

Chief executive and controller of audit Mr John Banham took the criticisms on the chin, going out to meet his critics and arguing that his report was intended as an aid rather than an impediment to managing the system.

Union leaders did not see it that way – nor indeed did Sir Keith Joseph who was quick to point out the apparent abuses detailed in it to management representatives seeking more money to do a deal with the unions on structural changes.

The commission began its work in 1983, although it was established by Act of Parliament the previous year. The commission was formed from the Local Government Audit Inspectorate which before the 1982 Act was under the wing of the Department of the Environment. Even then the inspectorate was taking a close interest in higher education issues – reporting unfavourably on the low teaching loads of polytechnic lecturers.

This theme was a main thread in the commission's later report after management consultants had been employed to sample prevailing conditions in a range of polytechnics and colleges.

Priorities for study are decided on by the 15 commissioners who meet monthly. In an average year it will publish five to six reports which are to effect value-for-money studies embodying the work of six to 18 months.

As with the National Audit Office the quest for value for money is written into the Act which established it. The aim is to show district auditors operating in the 13 districts covering England and Wales what it is possible to achieve.

The commission has quasi-judicial powers – most publicly exercised in the case of the Liverpool and Lambeth councillors – but which could in theory be applied to local authorities whose higher education institutions step out of line, surcharging in the case of wilful mismanagement, or where there is evidence of irregularities.

Its power to take direct action is greater than any of the other public watchdogs but the commission prefers to encourage rather than coerce authorities into adopting best practices.

ACARD's message is clear: British science for British prosperity. Nina Hall reports

Science's race for the market place

The group of senior scientists which advises the Government on how to make technology to the marketplace has been scrutinizing the rules of the art.

The Advisory Council for Applied Research and Development produced a report last week *Promising Areas of Science* which implied what a handful of enlightened scientists have been saying for years that the UK industry will lose the race for marketable technology unless scientific research is better directed. Government funding agencies such as the research councils, universities and industry must sit down together and study form when it comes to picking a winner, whether it is an obvious favourite or an outsider.

ACARD has been directly advising the Government over the past 10 years

Charlie Reece: one case study

via a series of reports on the application of research and technology, such as robotics, computer-aided technology and advanced manufacturing techniques.

In embarking on *Promising Areas of Science* two and a half years ago, the group of top academic and industrial scientists chaired by Charles Reece, ICI's director of research, took on a gigantic task. It is not surprising therefore that they were not completely successful.

What ACARD has tried to do is to ask and answer a question of major economic importance: how can Britain best benefit commercially from its scientific expertise? In the past, the report points out, scientific knowledge has been considered a cultural luxury – the fruits of prosperity.

According to the report, the Government still thinks research funding should depend on the level of the gross domestic product. That must change according to ACARD; Britain's economic success and therefore jobs depend on identifying those strategic areas of fundamental science that will provide fertile soil for technological advance. The message is blatantly *chauvinistic* – British science for British prosperity.

The report was disappointing in that the title suggested that "promising areas" would actually be identified. The terms of reference were: (a) to report on those areas of science and specific scientific developments likely to have significant economic consequences within 10 to 20 years; and (b) to comment on the adequacy of the UK science substructure in terms of what technology is needed.

Instead the study came up with only a vague recommendation that some kind of mechanism, which responded to but was independent of government views, be set up "to consider the feasibility of identifying the fields of science on which future technology and innovation should be based". It said in a rather long-winded way that the process of selecting research topics must take into account national needs as well as the concept of scientific excellence. In other words the British taxpayer who is actually funding most research should expect to get his or her money's worth in terms of improvement in standards of living.

How this should be done is not clear. Not only is ACARD uncertain about how areas of exploitable science should be identified, but it has not even reported what they are.

Apparently half a dozen areas ranging from biotechnology, through chemistry and transport to information technology were looked at, but some members of the group admitted that they had bitten off more than they could chew. Amid disagreements between individual members of the group some of the studies miscarried. Charles Reece decided to include only one area as a case study – that on information technology prepared by Cyril Hilsum, research director of GEC, on the basis that it was "the easiest to do" since much had already been done by Alvey Committee.

What ACARD found was that assessing national priorities for research is far from easy, since they depend not just on the commercial considerations of competition in the marketplace but also on changing views of social and environmental acceptability. The group even consulted Friends of the Earth. Also precompetitive collaboration, the current buzz-word in research and development, may have to be carried out on an international basis, for example through the recently announced EUREKA programme in information technology.

While this report is the first to consider harnessing research directly to the national economy, several reports evaluating research have been published in the past 20 years. In 1969 the Department of Education and Science produced a report called *An Attempt to Quantify the Economic Benefits of Scientific Research* which suggested that scientific discoveries should be appraised in relation to their economic significance. More recently, in 1982, the Leverhulme report concluded that a national research policy was needed to guide the allocation of public money to fundamental and strategic research.

A year later the policy was taken further. As a result of a House of Lords Select Committee on Science and Technology a system of annual reviews of Government-funded research was set up. The database of research and development expenditure now assembled should provide useful advice on the allocation of financial and manpower resources in research. According to the ACARD report more such databases are necessary. Not only is there a lack of large databases on science and technology or patents as exist in Japan and the United States, but no comprehensive sources of information on potential market needs exist either.

Indeed, one useful practical exercise that the ACARD group commissioned was to look at technological forecasting in other developed countries. The Science Policy Research Unit at Sussex University assessed the performance of four major industrial nations: the United States, Japan, France and West Germany, all of whom have some kind of national research strategy. The report concluded that Britain would do well to follow the example of Japan in taking a much longer-term view of scientific innovation, and cooperating in information dissemination at a national level.

Such moves would mean that the research councils, government departments and industry would have to work much more closely together. Indeed this is already happening. Many interdisciplinary programmes of obvious strategic importance have been flowering in the cracks between Council Boards, the Joint Optoelectronics Research Scheme. And finally scientists are beginning to recognize that traditional disciplinary barriers are disintegrating as the fundamental properties of matter become better understood.

SPRU points out that these developments will lead to changes in the way basic research is organized. These changes, combined with the need for an external assessment in relation to society's needs, may mean that the peer review system is inadequate as a mechanism for assessing funding priorities.

However the ACARD report does not envisage any major changes in the way academic research is funded. What is certain is that academics will have to give a little more thought not as to what to ask for but how to ask for it. Commercial promise will have to be bolted on to basic research proposals. This may simply require a change of outlook rather than a change in research direction.

Whether the ACARD report will produce any kind of concrete result is difficult to tell. A Cambridge consultant firm is currently conducting a pilot study and hopes to come up with some ideas by the end of the year.

The consultants, Segal, Quince and Wicksteed, say that during the year they will be talking to leading UK industrial companies who have an extensive commitment to research and development, the research councils, chief scientists in the Government department and key individuals in educational establishments. A wide range of bodies such as ACARD itself, the Advisory Board for the Research Councils, and the University Grants Committee will also be consulted.

A course in overcoming the obstacles

When the pragmatists and idealists agree, can success be far behind? This happy state obtains at Aberdeen University, which in the autumn of 1984 launched access courses for mature students as a bridge to degree level study.

The idealists, perhaps contemplating past centuries when the Scottish universities offered preparatory courses for intending students whose school education was not up to standard, argued that the university had a responsibility to a larger part of the community than only successful school-leavers.

Aberdeen's access course organizer, Dr Melvin Dalgarno, is a member of the moral philosophy department. "The whole idea of philosophy is button-holing people in the market place. You're only as good as your argument, and who knows where the next good argument is going to come from? You've got to listen to everybody."

The university's pragmatists, confronting the spectre of falling school rolls, were certainly prepared to back a scheme with the potential to bring in more students.

Aberdeen has not, of course, pioneered second-chance courses for those who have not gained university entrance requirements at school. But it has approached the courses rather differently from other institutions, and its first year has had a startlingly high success rate.

Return-to-study courses have tended to be the preserve of universities' extramural departments. Aberdeen, however, has fully integrated its access courses into the university's normal departmental life.

"We felt the best way to respond to the needs of adult returnees was not so much to build a bridge forward from the school curriculum as back from first years classes," says Dr Dalgarno.

"We wanted it to be a fully representative introduction to university study, so that people could establish for themselves whether they wanted to carry on."

The courses, which are offered in the morning, afternoon and evening, are taught by lecturers as part of their normal work, without extra pay.

It can be exhausting; admits Dr Flora Alexander, one of the course tutors from the English department, partly because the courses are taught in concentrated two-hour sessions, with frequent written work and a heavy marking load, and partly because the students are more demanding than ordinary undergraduates.

But they are also more enthusiastic, more self-assured and more talkative, and the staff themselves are finding the courses stimulating and satisfying, she adds.

"Increasingly, you get school leavers who find Shakespeare very difficult, and to whom the 19th century seems so remote, it might as well be the 10th century. With the mature students, you rather apologetically make them read *Hamlet* and *The Mill On the Floss*, and they say: 'These are great!'"

Many of the access students travel at least 30 miles to the university, not a distance to make the London commuter quail, but a different proposition in the north-east of Scotland.

Three of Dr Alexander's students came from Banffshire, leaving home at 6.30 am to attend classes. "Because they're making such an effort, we feel we have to make a big effort to make it worth their while", she said.

In 1984/85, the university ran modules in history, philosophy, sociology, education, English and geography: this year, it has added maths, and from next session will also offer economic history.

Students gain an access certificate on completing four modules, over either one or two years, which enables them to be admitted to the faculties of arts and social sciences, divinity or law.

However, since the courses are designed and taught by arts and social science departments, they are seen as particularly appropriate for students intending to take an MA: applicants are warned that competition for places in law is "extremely severe" and that they will need a record of outstanding performance to have a realistic chance of admission.

Dr Dalgarno says it is hoped at some stage to introduce science subjects, but this has so far proved difficult because of the level of technical knowledge demanded of entrants to science degrees. The science departments can perhaps take heart from the remarkable success of the scheme's first year.

Aberdeen initially investigated other institutions' experience of return-to-study courses, and was led to expect a very high drop-out rate, of up to 40 per cent, as well as a substantial failure rate.

In fact, the drop-out rate has been 12 per cent, with students leaving either for health reasons or because they were moving from the area. The first term's pass rate was 90 per cent, rising to 97 per cent in the second term.

The results cannot be attributed to the students having just missed achieving standard entrance requirements: over a third had no O grades or highers, and fewer than a fifth had one or more highers. Normal arts undergraduate entry currently requires four highers.

Twenty-eight of the 52 students who completed the session gained the access certificate in one year, five of whom have turned down or postponed accepting undergraduate places for family reasons. So far, course assessment shows the 23 students who are currently taking first year

Olga Wojtas

NOTICE BOARD

Promotions

WALES

Personal professorships: Dr I. D. Bowen (zoology) – University College Cardiff; Rev. D. P. Davies (theology and religious studies – Saint David's University College, Lampeter); Dr E. P. M. Gardener (director of Institute of European Finance at University College of North Wales, Bangor); Dr R. J. Marshall (director of medical illustration and audio-visual services – University of Wales College of Medicine, Cardiff); Dr R. Pethig (electronic engineering science – Bangor); Dr R. S. Pickard (zoology – Cardiff); Mr W. M. Tydeman (English – Bangor).

Readerships: Mr P. D. Anthony (industrial relations and management studies – Cardiff); Dr J. C. Bates (mechanical engineering and energy studies – Cardiff); Mr C. M. Boyd (music – Cardiff); Dr S. W. Charles (physics – Bangor); Dr I. A. Hughes (child health – Cardiff); Dr J. Kay (biochemistry – Cardiff); Dr J. Popplewell (physics – Bangor); Dr Graham Upton (education – Cardiff).

EDINBURGH

Senior lecturerships: R. E. Taylor (clinical oncology – temporary); S. Wilkinson (clinical surgery – temporary); Dr S. W. Fountain (clinical surgery – temporary); Dr J. D. Macmillan (fine art – part time and curator of university collection); Dr R. A. Riemersma (medicine, cardiovascular research unit – temporary); Dr G. S. Venables (medical neurology – temporary); Dr S. G. Hillier (obstetrics and gynaecology); Ms C. F. West (obstetrics and gynaecology – temporary); Dr C. M. Court-Brown (orthopaedic surgery); P. Hoare (psychiatry).

HERIOT-WATT

Readerships: Dr J. L. Davidson (chemistry); Dr J. V. Moloney (physics); Dr J. M. Peden (petroleum engineering); Dr P. N. Preston (chemistry); Dr A. J. Sangster (electrical and electronic engineering).

YORK

Personal chair: Dr Claire Cross (history).

Readerships: Dr Geoffrey Hall (psychology); Dr Euan MrPhail (psychology); Dr Edward James (translator); Dr Graham Parry (English and related literature); Dr David White (biology); Dr Jeremy Whiting (physics).

PAISLEY COLLEGE OF TECHNOLOGY

Senior lecturer... (land economy); ... (electronics and engineering); Mr J. ... mics and electro... Mr C. Sparrow ... electrical engineering.

PORTSMOUTH POLYTECHNIC

Personal professorship: ... Vihar (microwave ... trical and electron...

SUSSEX

Readerships: Dr P. ... (experimental psych... A. Coates (linguistics); ... du Boulay (artificial ... Dr T. J. Flowers (co... ry); Dr P. J. Gosling ... engineering); Dr I. ... (electronic engineering); G. Williams (geography).

Grants

SALFORD

Dr. O. F. Myring and Professor J. L. Livesey, £18,121 from procurement executive, Ministry of Defence (calculation of subsymmetric flow around engine inlet cowls at high speeds); Dr R. D. Arnell, £59,937 from procurement executive, Ministry of Defence (production of multilayer metallic materials by vapour deposition); Professor J. L. Livesey and Dr D. F. Myring, £18,999 from procurement executive, Minister of Defence (calculation methods for three dimensional air intake flow); Professor R. B. Cundall, £33,947 from procurement executive, Ministry of Defence (research into development of a jet efflux system); Dr M. Casey, £24,070 from SERC (chiral organoboranes as asymmetric Lewis acid catalysts); Professor J. L. Spencer, £28,070 from SERC (chiral iron-deficient platinum clusters); Professor J. L. Spencer, £11,240 from SERC (transition metal complexes containing MMIC bridges); Dr P. Lygo, £23,070 from SERC (enantioselective addition of B- and compounds); Dr J. Owen, £73,627 from procurement executive, Ministry of Defence (thin film energy storage devices); Dr T. W. Wallace, £23,427 from World Health Organization (total synthesis of Onguinase); Dr P. J. Webster and Dr D. Webster, £38,910 from SERC (engineering applications of neutron scattering); Professor D. G. Armour and Dr R. A. King, £26,000 from SERC (development of a graphical input interpreter for CAD of nonlinear control systems); Professor M. J. Hampshire, £9,867 from SERC (teaching company programme with Whipp and Bourne Ltd, plus £30,047 from Whipp and Bourne); Professor D. G. Armour and Professor G. Carter, £44,601 from procurement executive, Ministry of Defence (determination of aerodynamic measurement of aerodynamic multilayer materials); ... Sanderson, £24,594 from ... search Centre Contract ... gated ultrasonic Doppler ... sensor for an in-service ... ment); Dr D. F. Bleazard, ... plus £30,000 from ... Council Research Centre ... nic ARC council for ... transformer tap changer); ... Gerber, Dr D. Fletcher, ... R. Parker, £21,600 from ... (orthonormic filters for ... dient magnetic sensors); ... F. Myring and Professor ... Livesey, £18,382 from the ... ment executive, Ministry of ... (optimal duct design for ... intake flows); Dr A. Ko... tive, Ministry of Defence ... flight control system for ... aircraft); Professor P. Lorki... R. J. Orkowski, £30,000 from ... (prediction of noise from ... buildings); Professor P. Lorki... and Dr B. Iddon, £11,000 ... Smith-Kline Cheesak (fac... michaeadis); Professor G. ... and Professor J. L. ... £148,380 from SERC (high ... multinuclear magnetic reso... spectroscopy for studies in ... and organometallic chemistry); ... fessor G. Procter and M L ... Wakefield, £15,327 from the ... Group Research (synthesis of ... kolin and analogues); Professor ... Procter, £15,327 from Glaxo Group Research (use of organotin ... reagents in organic synthesis).

STIRLING

Dr R. H. Richards, £51,60 ... Ministry of Agriculture, Fisheries and Food (proliferative kidney d... case in Salmonid fish); Dr A. ... Duncan, £29,950 from SERC (rea... of Delft's inequality and the ... enhancement hypothesis).

Dedicated to the late Frances Horovitz, Michael Horovitz's *Midsummer Morning Jog Log* reflects her love of the Cotswold Valley where they lived in the 1970s. Illustrated by Peter Blake's mysterious pen and ink drawings, this long poem by one of Britain's least appreciated contemporary poets is published in three editions – boards, paper and a special signed edition – by Five Seasons Press, Madley, Hereford HR2 9NZ. On Tuesday Michael Horovitz will be reading from the poem – accompanied by Stan Tracey on piano – at the Riverside Studios, Hammersmith, London.

Open University viewing

Saturday May 17

BBC1
7.10 Computing and computers. Trees in data processing. (M252; 3)

7.35 Discovering physics. Lightning does strike twice! (S271; 8)
9.00 Design processing and products. Learning from experience. (T263; 8)

BBC2
6.50* Geology. Rock textures. (S236; 6)
7.15 Greece, 478-336 BC. Social life – the Oikos. (A292; 4)
7.40 Language development. What do you mean? (E837; 5)
8.05 The changing experience of women. Public place and private space. (U221; 6)
8.55 Curriculum evaluation and assessment. Sorting them out. (E242; 4)
9.20 Art in Italy 1480-1580. The Villa Farnesina. (A356; 2)
9.45 Organic chemistry. SN I or SN 2? (S246; 8)

10.10 Introduction to pure mathematics. Fourier coefficients. (M208; 13)
10.35 Mathematical models and methods. Dots and crosses – products of vectors. (M(T)294; 15)
11.00 Third world studies. The plough and the hoe: village life in Bihar. (U206; 18)
11.25 Computer analysis. Taylor series. (T282; 8)
11.50 Engineering product design. Evolution of the computer. (T292; 6)
12.15 Probability and statistics. Testing for independence. (M245; 7)
12.40 Modern art and modernism. Cubism and the changing countryside. Views of a valley. (A356; 13)
13.30 Crustal and mantle processes. Mineralization in Cornwall. (S336; 13)
14.00 Management and the school. Deputy heads: do primary schools need them? (E353; 3)

Sunday May 18

BBC1
6.45 Technology foundation course. The oil game. (T101; 9)
7.10 Materials processing. Polymer production. (T322; 7)
7.35 Metals and metallurgy. Metallurgical processing. Modelling planetary motion. (T(M)292; 4)
8.00 Oceanography. Hydrothermal plumes. (S334; 7)
8.25 The nature of chemistry. Transition metals: strong field ligands. (S304; 15)

BBC2
6.50* Introduction to calculus. Area for revision. (M(U)101; 7)
7.15 Biology: form and function. Patterns in development: cell movements. (S202; 14)
7.40 Genetics and innovation. Mastering the micro. (T282; 7)
8.05 The Enlightenment. Dinner at Baron d'Holbach's. (A204; 8)
8.30 World politics. Rhodesia: the domestic scene. (D231; 5)
8.55 Changing Britain, changing world. Whose land is it anyway? (D262; 5)
9.20 Social sciences foundation course. Seeing through the smoke. (D102; 15)
9.45 Mathematics foundation course. Curve sketching. (M101; 12)
10.10 Arts foundation course. "Jumpers". (A101; 14)
10.35 Science foundation course. Equilibrium rules, OK? (S101; 14)
11.00 Crime, law and conflict. City centre developments. The 19th-century novel and its legacy. Middlemarch – a forum. (A312; 7)
11.50 The earth's physical resources. Pine polar: origin and exploration. (S238; 7)
12.15 The physics of matter. How low can you go, Part II. (S272; 5)
12.40 Basic sciences for technology. Periodic tables. (T281; 4)
13.05 The earth: structure, composition and evolution. Metals to mineral. (S237; 6)
13.30 To be announced.

RADIO 4 VHF
7.00 Science foundation course. Nitrogen and the Haber process. (S101; 7)
7.20* The enlightenment. Diderot and the morality of pleasure. (A204; 15)
7.40 Technology foundation course. The oil game: round 2. (T101; 9)

Monday May 19

BBC2
6.55* Maths foundation course. Curve sketching. (M101; 12)
22.30 Reading for development. Writing together. (PE233; 4)

RADIO 3 VHF
6.25* Management and the school. Deputy heads: do primary schools need them? (E352; 3)
22.30 Arts foundation course. What the tortoise said to Achilles. (A101; 14)
23.30 The enlightenment. The Geneva episode. (A204; 14)

Tuesday May 20

BBC2
6.55* Science foundation course. Equilibrium rules, OK? (S101; 14)
22.30 Contemporary issues in education. The case of William Tyndale. (E200; 10)

RADIO 3 VHF
6.30 Modern art and modernism. Blaue Reiter. (A356; 14)
22.30 Open forum. Information programme for OU
23.00* Science foundation course. Nitrogen and the Haber process. (S101; 7)

Wednesday May 21

BBC2
6.55* Technology foundation course. The oil game. (T101; 9)
22.30* Arts foundation course. "Jumpers". (A101; 14)
23.30* The enlightenment. Dinner at Baron d'Holbach's. (A204; 8)

RADIO 3 VHF
6.30* Open forum. Information programme for OU students

RADIO 4 VHF
23.30 Introduction to calculus. Scaling and approximation. (M(S)283; 4)
23.50* Technology foundation course. The oil game: round 2. (T101; 9)

Thursday May 22

BBC2
6.55* Social sciences foundation course. Seeing through the smoke. (D102; 15)
22.30* Third world studies. The plough and the hoe: village life in Bihar. (U206; 18)

RADIO 3 VHF
6.35* Arts foundation course. What the tortoise said to Achilles. (A101; 14)
23.30 Purpose and planning in the curriculum 3: more glittering prizes. (E306; 2)
23.50 To be announced

Friday May 23

BBC2
6.55* Contemporary issues in education. The case of William Tyndale. (E200; 10)
7.20* Weekend outlook.

RADIO 3 VHF
6.55 Maths foundation course. Curve sketching. (M101; 7)

* Repeat programmes

NUFFIELD FOUNDATION

Awards to Newly Appointed Science Lecturers in Science, Applied Science and Engineering

The Trustees of the Nuffield Foundation are offering a limited number of awards of up to £4,000 to newly appointed University and Polytechnic lecturers in Science, Applied Science and Engineering.

The object of the awards is to give assistance to such lecturers in the early stages of their independent research careers.

Awards will be made competitively and preference will be given to lecturers wishing to explore novel and original lines of research that may not yet be at a stage suitable for Research Council support. Fifty five awards were made in 1986.

Eligibility

Applicants must be newly appointed to lectureships or equivalent posts in Science, Applied Science, Mathematics, Engineering or Medical Departments. Candidates must apply within 12 months of taking up their posts and may apply between the time of being appointed and taking up the post.

How to apply

There are two closing dates in 1988: *31st March and 30th November.*

Applications must be on the appropriate form, which is available from the Nuffield Foundation, Nuffield Lodge, Regent's Park, London NW1 4RS.

The scheme is only open to applicants from institutions within the United Kingdom.

(0697)

Conference

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Seminar

Seminar on Jacques Lacan,
Fri 30 May 1986, 10 am – 6pm

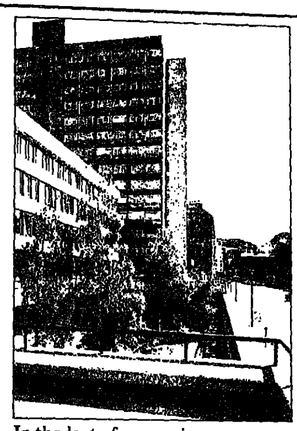
Held by the Dept. of French Studies in association with the French Cultural Delegation.

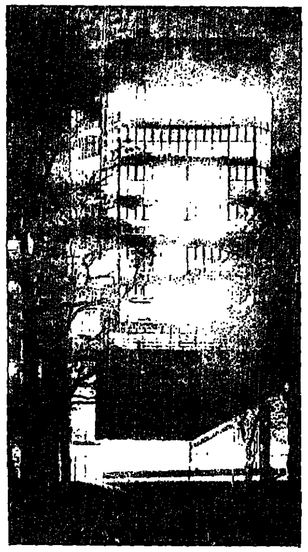
Speakers: E. Gebleaco (Nice) D. Shepherd (Manchester) & S. Hand (Oxford)

Details from Dr. A.R.W. James, Dept of French Studies, University of Manchester, Manchester M13 9PL. (061) 273-3333 *Admission free.*

Aspiring Dreams

Among the flops, Edinburgh (left) and Keele (below). Leicester's engineering block (right), a glittering prizewinner





In the last of our series on university building, Patrick Nuttgens describes the triumph of modern architecture stemming from the college boom of the 1960s

Sixties hits of the Mods

That was in 1950. The same year York was approved and set about a development, influenced by the Leeds plan, which is generally thought to be the most successful socially as well as aesthetically of all the new universities and a popular centre for the conference trade. York spent more on landscape than the usual percentage, making a great lake and spacing around it four-storey colleges built in the system called after its originators the *Consortium of Local Authorities Special Programme – CLASP.* The cladding material is again concrete, disliked by the students; but the total landscape is one of the triumphs of man-made apparently natural environments.

Lancaster set out successfully to create an urban complex with a lively high street, and that was right if only because of its remoteness from an anyway remote town. Warwick looked at first like a wasteland of widely spaced blocks with falling tiles but rapidly filled up. *Kent at Canterbury went for a more formal plan, with one college orientated so that a person at the right place in a dining room could see the cathedral spire while chewing his food.* Essex was in the event the least happy but started with a rational plan for separated functions, the tall forbidding 14 storey towers of dark engineering brick quickly becoming fortresses for the people's bureau. Stirling, probably in the wrong place, *Polytechnic of Central London, with good buildings in Marylebone Road* and New Cavendish Street, and Middlesex, where Howell Killick Partridge and Amis designed the highly distinctive faculty of art and design and Rock Townsend transformed an old warehouse with vivid contrasting colours.

So what was achieved in the architecture of higher education in the last 30 years? The major British contribution to university development was the "*continuous teaching environment,*" shown in both older and new universities. It is most clearly illustrated by the Essex sausage (with departments being pushed like meat along the sausage when more comes in) and the Loughborough chessboard (a grid plan which can be filled and intermingled on a tartan plan).

Essentially the new architecture showed that higher education is not superior or grander but just the same as everything else. But it did leave some great new buildings – to take a stringent selection, the library at Edinburgh, the Cripps building for New College in Cambridge, the extension to St Johns College Oxford, the library on Palace Green for Durham (a brilliant example of a new building fitting with the old), Mylnes Court Edinburgh (for the use if an old tenement for student housing), and Robinson College Cambridge (for the most original college plan of the century). Overall, compared with many other areas of building, the record is not bad.

The author is former director of Leeds Polytechnic.

The answer was the foundation of new universities on virgin sites, away from the maddening crowds of protestors trying to save the existing environment. In the event eight new universities were started between 1957 (when Brighton got off to a good start with the University of Sussex) and 1964 (when Stirling became the rearguard and dented its prospects with a disastrous foundation ceremony). They were the children not so much of idealistic theorizing as of pragmatic decision taking, to answer a proven need at exceptional speed. Although there were significant differences between them, they had certain features in common which shaped the architecture. They aimed mostly to grow to about 3,000 students; they had to offer a site of about 200 acres; they would be more residential than the older universities (whereas about 25 per cent of students were in residence in 1955, more than 40 per cent were in residences 10 years later); and they all took steps towards breaking down academic departmental barriers.

They were popular with local enthusiasts visualizing a new era, with baffled mayors seeking a policy, with planning officers with an odd piece of land to designate, with cathedrals fearing the collapse of the building unless more money was circulating, with preservationists finding a use for an old building, with bank managers looking (successfully) for new custom – and with industrialists. They were the most surprising, the Confederation of British Industry being in favour of old cathedral cities rather than manufacturing centres!

Sussex, getting off first, recruited Britain's most celebrated architect Basil Spence to plan some traditional complexes – departments, residences and central buildings – in a vigorous but gentle version of *Le Corbusier's Maisons Jaoul*, with concrete arches (supposedly mass concrete, actually hollow) magical outside in the morning sun, pretty dismal inside at any time. East Anglia retained the next most celebrated architect, Denys Lasdun, who produced a stunning development plan, a great walkway joining all the departments and an original group of ziggurats filled with students' rooms, all in concrete and soon weathering to the depressing finish of that intractable material. Meantime a temporary university of standard Medway construction huts was quickly put up so that the university could start and turned out to be better than the fully considered buildings.

Powell and Bon in 1958. Chamberlin described it as "a record of research and inquiry and a prognosis for future development". Its purpose was "to formulate a coherent pattern of development".

With that aim in mind, Chamberlin started his plan with graphs of the *bulge*, the huge increase in the post-war birthrate which would affect the universities in the 1960s, and the *trend*, the increasing proportion of school-children staying on after 16 which had already affected the universities in the 1950s.

He then isolated three basic types of university building – finite, repetitive and flexible. The *finite* would include such facilities as the senior common room, the working library, lecture rooms and a theatre; *repetitive* were nearly finite but with contents that moved and changed, like physics and biology buildings, or those that were social sciences; *flexible* were research laboratories, bookstacks and so on. The repetitive, extendable spaces became the "spine buildings" constructed with a "tartan" grid so that circulation and services could run through the narrow parts of the tartan and usable spaces occupy the major parts.

All the existing universities – some having been newly designated and promoted from university college status, like Exeter, Southampton, Leicester and Hull – produced development plans, of varying degrees of sophistication; in response to the question at the end of the 1950s whether they could expand or even double in size, all the universities astonished the government by making extravagant promises, even those which took a dim view of mass education.

Vice chancellors saw themselves as directors of industry, professors dreamed of indefinitely expanding empires, lectures saw unprecedented possibilities for promotion, unknown before and certainly since. The mass university was in motion and it seemed nothing could stop it. Edinburgh was already being ruined; Bloomsbury was planned for destruction; Durham and Newcastle split and the former produced some of the best of the new colleges and departments; St Andrews and Dundee also split, the former doing its best to ruin the little city but failing to spoil it altogether. What became obvious was that the necessary expansion could not take place in the existing university cities and towns without virtually destroying them.

It was to be said by architects in the 1970s that if you hadn't got a university building on your books you were not in the game. That was probably not true as regards the money; it was palpably true as regards esteem. Nearly all the big architects in Britain today made their names or consolidated their reputations in the years of academe in the boisterous decade. For the profession as a whole it was one of the great periods of architectural history.

The signs were at first auspicious that the signs were not. In the 1950s. The younger civic universities became universities but were still small. The one imaginative academic project, the founding of a new university of North Staffs at Keele, was an architectural disaster. It did to confirm the ideal of an ostentious assemblage of working units as different as possible from each other and then put up some permanent buildings that were even uglier than the huts and a lot less useful. Cambridge sported some college buildings hideous enough to stimulate the anti-ugly movement. Edinburgh mounted a neo-Georgian examination hall that kept the university waiting at its incongruity.

What brought the miserable episode to public attention was a scorching special number of the *Architectural Review* in November 1957. It was well known that Oxford had built some absurd neo-Cotswold college buildings for Nuffield; what now became obvious from a terrifying collage of photographs was that universities like Liverpool and Swansea had even less taste than the notoriously philistine ancient universities.

The horror of the publicity accelerated a movement that was already under way. In Oxford and Cambridge Basil Spence produced a residence for Queens College, Powell and Moya a brilliant piece of infill for Brasenose; at Hull Leslie Martin started a planning exercise that was to transform a dull precinct into a humane environment. By the early 1960s some outstanding new buildings were becoming known – Richard Sheppard's Churchill College Cambridge, Arne Jacobsen's St Catherine's Oxford, Howell Killick and Partridge's St Anne's Oxford and Sidney Sussex Cambridge, Arup Associates' Leckhampton Cambridge, Stirling and Gowans' spectacular engineering building at Leicester University, visited by architects from all over Europe until special visiting days had to be arranged.

Competitions had mixed fortunes but lasting effects. That for Edinburgh, vilified by everyone, started a process that led in due course to the destruction of one of the best Georgian squares in Britain. That for Sheffield started a new look at the organization of academic buildings and recognized the acceptance of mainstream modern architecture, with its high slab tower, its repetitive lower buildings and its spreading public spaces. By the early 1960s it was clear that modern architecture had conquered the academic world and that the new buildings were getting better. After all, they cost more per square foot than schools and a lot more than housing. They were an occasion for quality and even for mania, especially if the programme included a library, which would give a chance for architectural gymnastics, or gratuitous monumentality.

What changed the scene fundamentally was a change in attitudes, a wholly new programme for university development and the reorganization of the management of projects. The attitudes began to change when architects as well as academics accepted that university buildings were a functional necessity for ordinary people rather than an excuse for idiosyncracy – even the libraries were being rationally planned by the end of the decade. The new programme emerged from the Robbins report of 1961/63, itself following the proof by the local authority in Brighton that existing methods could hardly begin to cope with the numbers about to descend on the university scene. The management of projects was transformed when the University Grants Committee (founded in 1919) appointed its first resident architect in 1957 and began systematic cost analyses as guidance and then control for a rapidly exploding budget.

The universities were for the first time comprehensively planned, old as well as new, (with the exception of those of Oxford and Cambridge). Comprehensive development was fashionable at the time and it seemed obvious that universities should be regularized in the same way. The first plan for systematic growth (as opposed to individual buildings) was that for Leeds, prepared by Chamberlin

Harold Silver

Positelf discrimination

On March 18 *The Guardian* published a couple of advertisements for teachers of English as a foreign language – known to those of us in the trade as EFL teachers. One of the advertisements was for a Centre for English Studies at Bletchingdon, near Oxford. *The Guardian*, not for the first time, used its typographical imagination and presented the public request for "ELF teachers", full-time and part-time, for a summer school.

The temptation was too much. I applied.

THE CENTRE FOR ENGLISH STUDIES

BLETCHINGDON PARK
BLETCHINGDON
OXFORD OX5 3DW

ELF TEACHERS

Applications are invited from suitable qualified and ex p

The Secretary
The Centre for English Studies
Bletchingdon Park
Bletchingdon
Oxford OX53DW 20 March 1986

Dear Sir

I should like to apply for one of the posts as an elf teacher, as advertised in *The Guardian* on March 18.

I would consider myself well placed to me one of the full-time posts, given my previous experience. I have taught in elf schools in a number of countries, and have for several years taken an academic interest in various aspects of elf education. It is often assumed that the teaching of elves is similar to nursery or kindergarten teaching, but experience and research have convinced me of the perennial difficulty of combining the relaxed and discretely structured approach to the education of human children with the constant vigilance needed to retrain the often malevolent elfin tendencies. I have indeed found useful models for elf education in the 18th-century European Jesuit schools and the 19th-century English public schools.

I spent four years teaching elves in the Black Forest, three on the west coast of Ireland, and two as a peripatetic elf teacher in Shropshire and Herefordshire. I have on the whole found the lowland elves to be more self-motivating and capable of sustained effort, though the hill, forest and lakeland elves are more creative and imaginative, once they are persuaded to use their powers for positive purposes.

I left elf teaching in 1981 in order to run a research project on the elf education curriculum, funded initially by the Schools Council, and then with joint support from the Economic and Social Research Council and the Elf Rehabilitation Trust. The DES rejected an application for a continuation project. The project, based at Mab Hall, has produced a variety of curriculum materials which have been field tested. You will know of the controversy that surrounded the project's interim and final reports, which adopted an explicit approach to anti-antielfism, including a substantial element of positelf discrimination. It is not yet clear how far this project has permeated professional approaches to elf education, and the Secretary of State has neither set up the proposed Advisory Committee on Elf Education nor issued the intended accreditation and recognition guidelines.

Since the project was completed, therefore, I have not been tempted back into elf teaching, but have instead been running a sheltered workshop funded by the Manpower Services Commission, using unemployed elf labour to manufacture a form of elf-bolt for use in protecting cattle world-wide from foot-and-mouth disease.

My publications include two books – *Elfish Myths and Realities: a Heuristic Approach* (Methuen, 1978), and *Problems in the Further and Higher Education of Elves* (Society for Research into Higher Education, 1980). I have contributed articles on elfin linguistic disadvantage and cultural reproduction to, among others, the *British Journal of Educational Studies*, the *Unesco Elf Bulletin* and the *American Journal of Elf and Related Studies*. I am a Visiting Elf Fellow at the Centre for Contemporary Cultural Studies (Birmingham), and have contributed to seminars on elf motor learning at the Laban Centre for Dance and Movement (London).

I have no experience of Oxford elves. I have, however, taught Berkshire elves at an Elf Migratory Centre in Regent's Park, and I would expect Oxford elves to be similar in behaviour and cultural traditions. I would be willing to conduct a small-scale research project – for which I would seek a small grant, perhaps from the Nuffield Foundation – on the impact of Oxford University on Oxfordshire elfism. I would imagine that this could be done in an area such as that around Otmoor, and could be important given the likely threat of an M40 extension to local elfin communities.

I would welcome an opportunity to contribute to your work, and am available for interview at any time.

As referees I would name:

Erl King, Forest Castle, Thuringia, Federal German Republic;

The Editor, *The Graunlad*, Farringdon Road, London EC1.

Yours sincerely,
H. Silver.

I began to wonder by April 1 whether I might be called for interview, but even now, six or more weeks later, I have not heard from Bletchingdon. My academic registrar, to whom I naturally sent a copy, knowing his concern for the academic and professional issues in elfin and similar education, was not optimistic from the very beginning. He pointed out that I was unlikely to be considered for any such post, since I did not have relevant, substantial and above all recent experience, as laid down by the Council for the Accreditation of Teacher Education, and that my research experience could not be expected to count. I was not sure, however, how these criteria applied to the particular post – particularly as it is in a shortage area.

Since Oxford has a university department, a college and a polytechnic engaged in teacher education, I would have thought there was a marvellous opportunity in that area to set up a national, even a European, centre for in-service elf work. If, even now, I am called for interview, I shall point out the potential that the Centre for English Studies could have with such teacher education partners.

But no response yet, from Bletchingdon, or *The Guardian*.

Chernobyl seems destined to be added to the grim lexicon of environmental disasters that become household words in any household exposed to the free press. The stricken Russian nuclear reactor will join earlier disasters: Torrey Canyon, Amoco Cadiz, Seveso, Three Mile Island, Bhopal; from a slightly different perspective one might add the Titanic and the doomed space shuttle Challenger.

All these were associated with the novelty of catastrophe; all were linked to a mighty technology whose designers and promoters claimed it could not go wrong "within the bounds of credibility". All brought death, injury or enormous emotional stress to innocent and trusting people and in some cases to unborn children.

The technical definition of an environmental risk is the combination of the magnitude of an event leading to death or injury and its likelihood of occurrence. Risks that pose the greatest challenge are those whose chance of happening are allegedly small, but whose consequences may be truly catastrophic. One immediately thinks of major technological hazards such as nuclear facilities or large chemical establishments and toxic waste dumps. But there are also more insidious risks which should prove much more serious for mankind, such as the removal of up to three quarters of tropical forests, increasing concentrations of carbon dioxide and bringing about alterations in the composition of free radicals and middle troposphere.

The issues are the same but the circumstances are different. These global risks may creep upon us so slowly as to pass a threshold of no return before we are capable of effective global response. As with technological hazards, we frankly do not know either the probabilities of catastrophe or the broad details of what all the consequences might be.

Chernobyl offers a salutory lesson. It dampens down the flames of overconfidence, insists that we always leave room for error, and poses the question of just how "big" a technology should become. A "big" technology is one so sophisticated as to defy understanding by any single individual and which demands safety systems and regulatory arrangements that to a substantial degree rely on informed guesses. Chernobyl proves that these guesses *can* be wrong and that the consequences of error are both enormous *and transnational*.

France excluded, nuclear power is unpopular in all democracies and only accepted in centrally planned political systems. Western public opinion has been drifting against nuclear power for a decade but, as yet, only the Swedes have actually put into power a political party that is determined to eliminate nuclear energy. As they survey their non-nuclear future even the Swedes are having their doubts. Chernobyl will shift the anti-nuclear fulcrum a little further, most probably by moving some of the uncommitted middle ground (about 30 per cent of the British population) into the anti-nuclear camp.

What seemed incredible pre-Chernobyl is now not only credible but actual. What *was* a probability of 10^{-6} is, in the minds of many who respond to events rather than scientific assurance, a likelihood of 10^{-3}. The nuclear scientists who say such an accident cannot happen here are treated as servers of their own rather than national interest. And the politicians who complete the ventriloquism are perceived either as gullible or as incapable of independent judgement.

The Chernobyl accident could not have come at a more awkward time for the Government. The Conservatives have always been extremely uneasy about placing their pro-nuclear ideologies too high on the political pedestal. In 1979, before they committed themselves to a major nuclear programme, preferably based on the American designed pressurized water reactor (PWR), the Cabinet was told to keep a low profile and let the industry make all the running. Lord Marshall was appointed to undertake the latter task and he has done so admirably. Almost all the work of reassurance and buttressing has been done by the nuclear industry and its own advisers.

Nevertheless, the Conservatives face major nuclear decisions within the next six months. First there is to be a parliamentary debate on the special development order that, if passed, will allow the industry – through its radioactive waste executive (NIREX) – to examine the geology of four contender sites for the disposal of low level and short-lived intermediate level radioactive waste.

The debate will inevitably draw in the recommendations of the Commons environment committee, which was blisteringly critical of radioactive waste technology and management, as well as the perennially thorny issue of the Sellafield complex. Inevitably, recent events will cause MPs not least from the four affected constituencies, to raise the spectre of mini-Chernobyls in the salubrious clay belts of rural England.

Then there is the report of the Layfield inquiry into the proposed Sizewell B PWR. The report is long overdue and will not be in ministers' hands before late September. Sir Frank Layfield has ample ammunition to fire at the nuclear industry should he be convinced by the arguments presented to him.

Of special significance is the work on probabilistic risk analysis (PRA), pioneered by the UK Atomic Energy Authority, and now regarded as the lynchpin of safety assessment. PRA received a breath of new life after the Three Mile Island accident because it predicted the events that led up to that disaster six months before it occurred. But PRA is still, in essence, computerized guesswork. Chernobyl makes guesses harder to believe. Sir Frank also heard enormous quantities of closely fought evidence on why the standards set by the International Commission on Radiological Protection (ICRP) are too low, and that levels of acceptable radiological exposure should be lowered by a factor of five. Chernobyl will that debate and should take the level of scientific

In addition, Sir Frank impassioned plea from the Scotland Electricity Boards sion favouring the PWR the death knell of the British and tested advanced (AGR). The Scottish board that the AGR is an inferior technology and that it would for Britain to commit itself monoculture. Chernobyl doubts on any pressurized fuel cooling or heat transfer is an intriguing question in political ground in the post-era. With this Government doubts it. The PWR is an Am technology, though, and is built by a joint British and Amer consortium should still arouse political waves.

Finally, there is the Dounreay demonstration fast reactor fuel reprocessing facility. The outline proposals this technology are currently being examined at a public inquiry that has been boycotted by many anti-nuclear groups. The Dounreay design has not yet been subjected to a full safety analysis so any forecasts of radiation releases either in normal operation following an accident can only be surmised.

Chernobyl will inevitably lead to calls for a more complete safety appraisal. This cannot be done without delaying the decision to grant extra planning permission. The Government cannot and will not wait because it wants to beat the French to establishing the technology. If Dounreay had been nearer to London and had been opposed locally, such a move would have been extremely risky. As it is, the Dounreay decision, following hard on the heels of the radioactive waste, PWR and Sellafield debates will cause the opposition parties to rethink their nuclear stand. Chernobyl will help to shape the nuclear argument in the next general election campaign.

The real tragedy of the Chernobyl disaster remains the plight of the innocent who are not informed of the possible danger to which they are exposed. Mostly these people are Russians expected to carry on normally in the interests of the technological ego and because the Soviet nuclear programme must be extended. As in France, nuclear loyalty in the USSR equates with loyalty to the state: to be anti-nuclear is almost tantamount to treason.

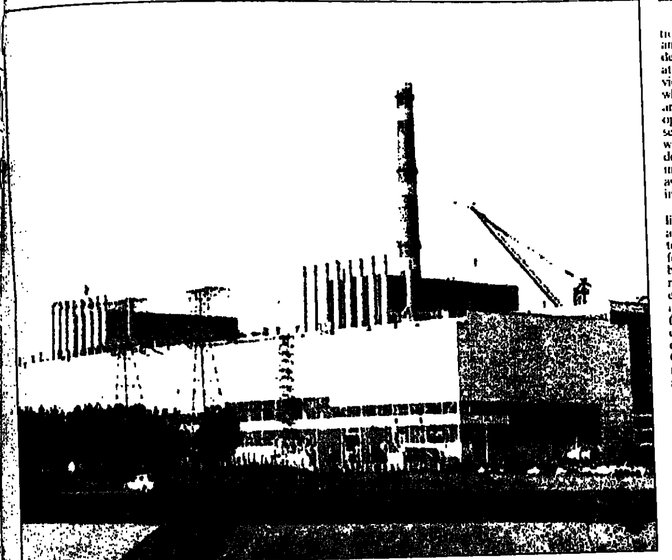
Should the Russians continue to maintain their silence, then a great scientific opportunity will have been lost. Just as the British were derelict in not publicizing fully the medical aftermath of the Windscale fire, so the Soviets will do the world a great scientific disservice if they do not undertake a full and open study of the precise chemistry and dispersion characteristics of the radiation plumes, and the medical repercussions both close at hand and further away.

We still do not know how to handle a serious nuclear disaster, so it is not surprising that the Soviets have experienced problems. International collaboration on the post-disaster analysis and relief operations would be of immense value to humanity and would help to clarify the all important concept of credibility. The Russians are doing neither their own nuclear cause nor that of any other country any good by not sharing the scientific lessons that disasters of this kind provide, horrible as they are.

The author is professor of environmental sciences in the University of East Anglia.

Explosion tha shattered faith in atomic pow

The implications for Britain's nuclear programme have yet to settle, reports Timothy O'Riordan



The stricken plant at Chernobyl: doubts about the fallout remain

Mikhail Gorbachov: vaunted spirit of openness

Conspiracy of silence a setback for Gorbachov

In Russia, *pravda* means truth and *izvestiya* means news. This has given rise to a popular Soviet joke: "There's no news in *Pravda* and no truth in *Izvestiya*." It is a sentiment that exemplifies the widespread scepticism that exists in the USSR about the reliability of the Soviet press, and one that Mikhail Gorbachov has been at pains to eradicate since he came to office in March 1985.

For at least a decade, Gorbachov had watched a self-indulgent, increasingly geriatric leadership allow the country to decline into a state of inertia. Under Brezhnev, falling economic growth rates were accompanied by rising public alienation expressed as delinquency, low productivity, drunkenness and increasing social instability. Yuri Andropov's accession to power seemed to offer some hope of a way out of the impasse, but that hope was extinguished when he died after only 15 months in office. His successor, Chernenko, was old, ill and symptomatic of the leadership that had caused the problems in the first place: mercifully, his term in office was short.

Gorbachov knew that he had to act quickly. The overriding priority was to get the economy moving, but first he had to weed out the elderly, incompetent, often corrupt officials who staffed the party and state apparatuses. None of this would do any good, he realized, unless he could persuade the people – the "working masses" – to give their active support to his programme of regeneration. He decided, therefore, to embark upon what he called the "psychological restructuring" of society, a concerted attempt to revive confidence and enthusiasm.

To do that, Gorbachov had to convince the people that he meant what he said, and that they could believe what they were told. This is not an easy task in a society where rumour and anecdote often substitute for official sources of information; where rumour is usually less than the truth, and where the more often a rumour is recounted the less true it becomes. As another Soviet joke goes: "Did you hear about the woman in Leningrad who won a car in the state lottery?" to which the reply is "Yes, but it wasn't a woman, it was a man; and it wasn't in Leningrad, it was Moscow; and it wasn't a car, it was a motorbike; and it wasn't in a lottery – he stole it!"

A key element in psychological restructuring is *glasnost'*, a word that is usually translated into English as "openness" or "publicity". Not unreasonably, Western politicians and media contrasted the new vaunted openness with the irresponsible secrecy with which the Soviet Union tried to conceal the accident at the Chernobyl nuclear power station in the Ukraine. As the Under Secretary of State for Foreign and Commonwealth Affairs put it in the House of Commons: "The lesson of this incident is that the openness which Mr Gorbachov has said is necessary in Soviet society, must become a reality". The Opposition front bench spokesman referred to "the Soviet Union's paranoid secrecy"; while the leader writer of the *International Herald Tribune* took the view that: "A closed society, where only the highest circles are permitted to debate, hears only its own voice. Secrecy is a disease and Chernobyl is its symptom, a threat both to the Soviet Union and its neighbours."

The Chernobyl accident has unquestionably done Gorbachov much harm. Just at a time when arms negotiations are at a crucial stage and when mutual trust is at a premium, the behaviour of the USSR, with respect to a matter of legitimate international concern, has been such as to place a question mark over Soviet credibility.

In fact, *glasnost'* does not mean openness as conventionally understood in Western countries. In its Soviet, *political* definition, it means selectively increasing the flow of information to the public, *but without increasing the public's right to claim independent access to information*. As Gorbachov put it in a keynote speech delivered to a conference of ideological workers on December 10 1984:

'*Glasnost'* is an integral part of socialist democracy and a norm of all social life. Extensive, timely and frank information is indicative of trust in people, respect for their reason and feelings, and of their ability to form judgements for themselves about any given event. It – *glasnost'* – raises the activeness of workers. In the work of party and state organizations, *glasnost'* is an effective means of struggle against bureaucratic distortions, it makes a more thoughtful approach to decision-making necessary, . . . and is a means to correct shortcomings and omissions. On this in large measure depend the persuasiveness of propaganda, the effectiveness of socialization, and the guarantee of unity of word and deed.' (*Pravda*, December 11 1984)

It will be noticed that the vital question as to who controls the release and extent of information is not mentioned. This is not surprising, since control is the party's exclusive monopoly which it maintains by censorship and manipulation of the *nomenklatura* system of appointment (which *inter alia* includes all the chief executive positions in the mass media).

***Glasnost'* has failed its first real test. Whether it can ever recoup its credibility in the international arena is problematical. But the point is that it was never really meant to apply to international affairs: as the quotation from Gorbachov's speech makes clear, *glasnost'* was something that was intended primarily for domestic audiences. Here Gorbachov – at least in the short term – may have suffered less damage. In the week following the Chernobyl accident, all the signs were that the bulk of the general public in the USSR had calmly accepted the explanations given to them by their government, and that, in many cases, this acceptance was accompanied by a belief that the affair had been cooked up by the hostile bourgeois media. But beneath the surface of an apparently conformist society lies a remarkably varied cultural and intellectual life. This is true not just of the literary and artistic intelligentsia, it applies also to many who belong to the scientific, technical and administrative strata – precisely those elements whose active support is vital if Gorbachov is to have any chance of success.**

They are bound to be resentful that the leadership did not "respect their reason and feelings, and their ability to form a judgement for themselves". Gorbachov must reassure these interests and convince them that *glasnost'* has some real meaning and relevance to their lives – professional and private. If he does not, then his chances of effecting the psychological restructuring that he rightly regards as being so important will be slim, and the slide back into inertia will have begun.

Peter Frank

The author is senior lecturer in Soviet government and politics at the University of Essex.

Problems shared?

Until much more detailed information is available about both the cause and the course of teh Chernobyl accident it is not really possible to substantiate, or refute, either of these points of view. This is because one cannot yet say whether the release of radioactivity arose because of faults in the design and operation of the Chernobyl reactor per se, or whether the accident highlights weaknesses in nuclear power plant design and operation generally which may have been underestimated in safety assessments relating to plants elsewhere in the world.

Although graphite moderated, light-water cooled reactors like the one at Chernobyl are undoubtedly unique to the USSR, it is the combination of features which is unique. The reactor belongs to a broad class called thermal reactors, so called because the high energy neutrons emitted during fission are slowed down in a moderator to low (thermal) energies before themselves causing further fission as part of the chain reaction. The moderator used at Chernobyl is graphite, and the same material is used in the UK Magnox and advance gas cooled reactors, and in the high temperature gas reactors in the United States and Germany. Graphite can burn in air; it also reacts with water at high temperature to form potentially explosive hydrogen. However, with the exception of Chernobyl the reactors cited are all gas cooled, so that the likelihood of graphite-water reaction is small, since water is not normally present in the reactor core. Chernobyl, on the other hand, was water-cooled, so that the core contains a large amount of water, albeit normally separated from the graphite.

Because the fission products are radioactive the uranium fuel is encapsulated in cladding. Heat from the nuclear fuel passes through the cladding to the coolant. Like most light and heavy-water cooled reactors, Chernobyl used a zirconium alloy cladding material, because, at normal operating temperatures, it is very resistant to water corrosion. However, at the elevated temperatures which can arise in an accident, water reacts with zirconium to form hydrogen: the problems which this reaction caused during the Three Mile Island accident are well documented.

In order to improve the thermal efficiency of the system coolants are normally pressurized. In most reactors this is achieved by surrounding the whole core with a pressure vessel, either of steel or pre-stressed concrete. However, on Chernobyl, as on the UK steam generating heavy water reactor and the CANDU reactors, each fuel element is surrounded by a pressure tube, which separates the coolant from the moderator, and the pressure circuit consists of several hundred separate pressure tubes. From the safety point of view this can have the advantage that failure of one tube need not affect the others, whereas failure of a pressure vessel clearly affects the whole core. However, if there is an explosion in the core many pressure tubes could be affected.

In order to get a release of radioactivity one therefore has to do three things. First, one has to rupture the cladding. Second, one has to have a breach in the cooling circuit, and third, the radioactivity has to escape from the building housing the reactor. In pressurized and boiling water reactors and in CANDU, where breach of the cooling circuit would result in all the water present turning to steam, which would generate large pressures within the relatively small buildings involved, the reactors are surrounded by substantial primary containment buildings. It appears that Chernobyl did not have such a substantial containment building and that, in this respect, the building was similar to that surrounding Magnox and advanced gas cooled reactor systems.

Another feature which Chernobyl shares with Magnox and advanced gas cooled reactors, as do CANDU systems, is that refuelling is carried out while the reactor is running. This is in contrast to the pressurized and boiling water reactors, for example. The importance of this is twofold. First, in order to refuel on load it is necessary to link the refuelling machine into the primary cooling circuit, and failure to do so properly provides a pathway for the escape of any radioactivity in the cooling circuit. Second, refuelling represents a point at which it is possible to damage the highly radioactive used fuel.

Although in most reactors the coolant circuit is a closed one, and the steam turbine used to generate electricity uses steam produced in a separate circuit, this is not the case with Chernobyl. Here, steam produced in the core goes direct to the steam turbines; so, too, will any gases produced in the core.

In the event of a release of radioactivity following a core accident, the type of radioisotope released depends both on temperature and on the form of the fuel used. If the fuel temperature is below its melting point (which is 1,130°C for uranium metal and 2,500°C for uranium dioxide) then the more volatile fission products are released, of which the most important are iodine-131 (because it is concentrated in the thyroid) and caesium-137 and strontium-90 (because they can be incorporated into bone).

The normal fuel at Chernobyl was uranium dioxide, as with all the western water cooled reactors and the advanced gas cooled reactor. However, it has been suggested that some uranium metal fuel may have been present, in order to produce weapons grade plutonium. Such a fuel was certainly used in the earlier Soviet reactors of this type and is, of course, used on Magnox reactors.

At this stage it might be tempting to conclude that, since aspects of the Chernobyl design are to be found in all the reactors discussed, all ought to be condemned. Such a conclusion would be premature, since nuclear reactor risk assessment involves both knowing what is possible and evaluating the probability of a particular sequence occurring. An awareness of a particular problem can promote design changes which then lower the probability of it occurring. It follows from this that what is *vital* is that there is a complete and comprehensive release of information relating to the accident, and that this receives very detailed analysis. Only in this way will we be able to distinguish between specific and generic problems, and use what is undoubtedly the worst nuclear reactor accident in the world so far to improve our knowledge and assessment of nuclear safety generally.

Malcolm Scott

The author is senior lecturer in the department of physics, University of Birmingham.

BOOKS

Lodging under Her Majesty's roof

by Robert Reiner

Imprisonment in England and Wales: a concise history
by Christopher Harding, Bill Hines, Richard Ireland and Philip Rawlings
Croom Helm, £25.00
ISBN 0 7099 1294 3

Victorian Prison Lives: English prison biography 1830–1914
by Philip Priestley
Methuen, £14.95
ISBN 0 416 34770 3

A History of English Criminal Law volume five: The Emergence of Penal Policy
by Leon Radzinowicz and Roger Hood
Stevens & Sons, £75.00
ISBN 0 420 46280 5

When volume one of Sir Leon Radzinowicz's monumental *History of English Criminal Law and its Administration from 1750* was published in 1948 it constituted a major criminological and historical landmark. At that time the history of crime was the province of sensationalist and salacious revelations about notorious evil-doers, their misdeeds and just if bloody retribution, not an area for serious academic study.

In many ways Sir Leon's book, the first of a projected six parts, was remarkably innovative. Contrary to the implications of its title, and the expectations engendered by its appearance from a traditional legal publishing-house, it did not adopt a merely formal and institutional approach to criminal law. There was considerable attention to the social sources, context and meaning of the law in action as much as in the books. The work involved immense, painstaking, indeed awesome, scholarship (the introduction informed us that the author consulted some 1,250 reports of commissions and committees of inquiry, 3,000 accounts and papers, 800 annual reports and 1,100 volumes of parliamentary debates, as well as many British and foreign authors). Despite this it was lively, readable, and accessible to an audience beyond the ranks of those brave enough not to be deterred by its formidable bulk.

The welcome publication of the fifth volume, ably co-authored by Roger Hood (head of the Oxford Centre for Criminological Research), appears in a very different climate for historical studies of crime and penal policy. As the authors state in their preface, "since volume four was published, in 1968, there has been a remarkable upsurge in historical studies of crime, criminal justice and punishment." A 1980 bibliographical essay by Victor Bailey (one of Radzinowicz and Hood's researcher officers) on "Crime, Criminal Justice and Authority in England", has a selective bibliography listing over 100 studies published in the 1970s. The change has not only been quantitative, but involves style, theory, methodology, and focal concerns. The post-1968 flourishing of historical studies of crime and criminal justice has predominantly been cast within a revisionist mode, inspired by the new Marxist and *marxisant* social history pioneered by Hobsbawm, Rudé and E. P. Thompson. There has also been much theoretical work on the history of social control inspired by Foucault, as well as, on the other hand, a proliferation of detailed research on local criminal justice records within a more traditional historical perspective. The changing fashion was signalled by E. P. Thompson's *Times Literary Supplement* review of Radzinowicz's 1968 volume, which, while lauding the achievement of the earlier parts, was somewhat lukewarm about the fourth.

In the present context, Radzinowicz and Hood's book, though acknowledging a debt to more recent work, in most respects resists the revisionist trend. While the first volume of this series stood in contrast to traditional legal history in its emphasis on the social context of law, when compared with the bulk of recent studies, Radzinowicz and Hood now seem distinctive in their focus on the law itself, and the thoughts and machinations primarily of the elite who fashioned it. For the most part it is top-down history, sharply contrasting, for example, with Priestley's *Victorian Prison Lives*, which attempts to capture the subjective experience of the predominantly mute raw material of the administrative innovations charted by Radzinowicz and Hood. Although there are excellent chapters on 19th-century positivist and Marxist criminological theory, Radzinowicz and Hood almost completely eschew any overt theoretical interpretations, and (a welcome relief from some other recent works on the same period) entirely avoid arcane jargon. The book is written in clear and elegant prose, aimed primarily at straightforward exposition of the unfolding law, institutional structures and contemporary theories.

This is not to say, of course, that there is no implicit theory in the work. In so far as it is made explicit (particularly in the introduction to the first volume), the perspective is an attempt to avoid both the idealist aridities of purely intellectual history and the straitjacket of economic determinist versions of Marxism or other types of structuralism. Despite its top-down approach the theoretical stance, if teased out, would probably not be miles away from Thompson's. This is implied, for example, in the interesting analysis of the reasons for the failure of 19th-century Benthamite attempts to codify criminal law. The movement for codification, we are told, "was not the product of social grievance or social struggle. It was a more remote, more intellectual vision of things and, as such, it is doubtful whether it ever made much public impact." The moving force of effective legal change, this implies, is "social grievance and struggle". The enthusiasms of elites can take root only in propitious circumstances, but prevailing social consciousness must in turn be channelled through elite ideas and actions of leading individuals and movements.

"A peep into Ilchester Bastille", the frontispiece to a 1921 pamphlet attacking alleged abuses at Ilchester Gaol. This picture and the one below are reproduced from *Crime and the Law in English Satirical Prints 1600–1832* by J. A. Sharpe (Chudwyck-Healey, £38.00).

The substantive contribution of the book is variable. Alongside the previous volume, it constitutes an authoritative, indispensable and lucid work of reference on the evolution of penal policy. But due to the growth of studies in this area, some topics have already been exhaustively dealt with elsewhere, for example, the rise of imprisonment as the predominant mode of punishment during the 19th century, displacing transportation and (earlier) capital punishment. (The other two books under review are themselves important works on this question.) Radzinowicz and Hood's original contribution is greatest in the more purely legalistic chapters, concerning topics which have not been as well-charted before, notably the discussion of the legislative attempts to deal with the "habitual criminal" and the fascinating analysis of the bedevilled quest for an appropriate status for "political" prisoners, and the thorny sentencing problems of how to reconcile judicial discretion in considering individual characteristics of cases with the demand for consistency. Taken as a whole, the book is a fascinating, comprehensive and stimulating study of the growth of the modern penal system, raising many intriguing parallels with contemporary debates.

Radzinowicz and Hood is inevitably (given its size and price) going to be a volume consulted in libraries rather than for individual purchase. The concise history of imprisonment offered by Harding, Hines, Ireland and Rawlings is clearly intended to be a work for students, as well as those generally interested in the history of punishment. It performs an essential service in synthesizing the results of recent research into a comprehensive history of imprisonment from the middle ages to the present. It is especially useful for providing a longer-term perspective on changing patterns of punishment. Clearly written, lively and judiciously reviewing a wide range of controversies, it will be invaluable for students wishing a straightforward but penetrating overview (a paperback edition would be welcomed).

Priestley's account of the subjective experience of imprisonment in the Victorian period is a remarkably innovative achievement. It is aimed at constructing a "generic image" of the subjective quality of the prison experience, blending hundreds of personal narratives into a single, collective account. Primarily letting prisoners and staff speak for themselves the book is ingeniously constructed out of numerous prison memoirs, and organized chronologically in terms of a prisoner's progress through sentence. Beginning with the degradation rituals associated with reception, which introduce the prisoner to what "One-who-has-endured-it" describes as his "first and ending eventually for the more fortunate with release, after years or decades of instruction into the lesson learned by one of Priestley's sources: "Liberty is more to be desired than fetters of gold". Along the way we are made privy to the details of the convict routine: hard labour, hard bed, chapel, the minutiae of disciplinary control backed up by the lash, the dramatic climax of the scaffold for some, and obsession with diet and its digestive after-effects for all. Priestley's masterly reconstruction of the personal experience of Victorian imprisonment out of these varied vignettes is a fascinating but grisly reminder of the evils which may be inflicted in the name of good. As Priestley remarks, through the details of the institutional picture can be discerned "the features of Leviathan wearing that iron grin that so reassures our rulers and yet unsettles the rest of us in ways we can't quite define."

Some rather depressing implications for our current concerns about "law and order" emerge from these important books about our penological past. The first is the seeming imperviousness of the prison institution to widespread awareness of its failure (or even counter-productiveness) from the point of view of rehabilitation or individual deterrence. Harding *et al* quote the "Water Poet" John Taylor's depiction of the common early 17th-century image of the jaile as "a magazine of sin, an universitie of villany, an academy of foul blasphemy, a sinke of drunkenness." Even in the heyday of 19th-century confidence in the improving effects of incarceration there were those who questioned the wisdom of prison as a means of crime control. The Reverend Sydney Smith's *Edinburgh Review* essays of 1821 (referred to by all these authors) castigated prisons as "large public schools maintained at the expense of the country, for the encouragement of profligacy and vice, and for providing a proper succession of housebreakers, profligates and thieves." Sights have officially been lowered to "positive custody" since the 1979 May Committee Report, but a blend of inertia and punitiveness keeps the prison alive, and we are promised 16 new ones by the 1990s.

There is a sharp contrast between the new "realism" which pervades current thinking about crime, left, right and centre, and the puzzled purported panaceas reported in the pages of Radzinowicz and Hood. Try and again the proponents of some penal fashion cried *eureka* as the wondrous curative properties of their pet policy. Throughout the 19th century (and on, beyond the period of these books, during the first half of the century), for all the moral panics about particular crime waves (*lucidly* collected in *Geoffrey Pearson's Hooligan*), there was a pervasive optimism about rescuing offenders, and if not eliminating crime and disorder, at least rate keeping them under substantial control.

In 1827 Lord Chief Justice Best declared of transportation: "I am confident that in a short time our population will be restored to a virtuous state . . . the number of our criminals diminished." Nearly a century later, the 1907 *Probation of Offenders Bill* was welcomed by the Earl of Meath because "there can be no doubt whatever that (it) will prevent crime, and so a large extent empty our jails."

During what Radzinowicz and Hood characterize as "a phase of new hopes and large expectations" in which a "very optimistic approach towards crime and its control . . . flourished", even the currently beleaguered social scientists had their part to play. A 1966 article in *The Justice of the Peace* advocated "experiment from time to time in the treatment of criminals in the light of the most recent theories of criminologists". There was, indeed, substantial basis for this optimism. Rates of crime and severity of sentences declined in the late 19th century, though *the relationship, if any,* between these phenomena could be variously interpreted. Moreover, some forms of penal regime could plausibly be hailed as effective in terms of rehabilitation, for example, the early borstals, though as David Rothman warned about similar claims made for the American model reformatory at Elmira, *the annual reports offer* statistical evidence of success only "provided that one did not scrutinize them too carefully".

Evidently the precondition for liberal experimentation was a more relaxed climate of opinion *engendered by* falling crime rates, which in turn owed more to improvements in economic and social *welfare than to the penal* system. If as Winston Churchill remarked in 1910, the treatment of crime and criminals are "symbols which mark and measure the stored-up strength of a nation, and are the sign and proof of the living virtue in it", then only the bleakest conclusions can be drawn from contrasting Churchill's own humane record as Home Secretary (documented by Radzinowicz and Hood) and the current climate on "law and order".

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Elizabeth Fry seated in a cell in Newgate

BOOKS

Divine structures

God's Plot & Man's Stories: studies in the fictional imagination from Milton to Fielding
by Leopold Damrosch, Jr
University of Chicago Press, £23.75
ISBN 0 226 13579 9

The subject of this book is a large and important one: the problem of the relationship of fiction to truth. Professor Damrosch is especially concerned with "the tension between invented narratives and the divine structure of meaning that human life was supposed to embody", and he explores this tension in 17th-century Puritan narratives and 18th-century novels.

There are chapters on Puritan views of the relationship between experience and art, *Paradise Lost*, Bunyan's major works, *Robinson Crusoe*, *Clarissa*, and *Tom Jones* (with some concluding thoughts on *Tristram Shandy* and more recent problems of narrative). Damrosch rightly urges us to read 18th-century novels as novels of ideas which test religious questions through their narrative methods as well as through their subject matter. He is thus hostile to the tendency of those modern critics who regard fictions as essentially concerned with their own fictiveness. His comment on Lovelace's reaction to the sermon on David and Bathsheba is very apt: "He deflects it with a time-honoured stratagem for evading moral issues: he performs an act of literary criticism".

Damrosch's aims seem to me admirable, and there is much that is illuminating in his reading of individual works. However, given that he is concerned with the relationship between literature and religion in the period from the mid-17th to the mid-18th centuries, his account of what constituted religion is surprising. He veers not very satisfactorily from theological to cultural to literary critical approaches to his chosen texts: his book lacks a developed historical argument. He chooses to focus on Puritanism, a term he applies loosely with reference to the works of Bunyan (a nonconformist), Defoe (a dissenter), and Richardson (an Anglican). He is obviously much more familiar with 17th-century than 18th-century religious works, and hence he is much more persuasive on Bunyan than Defoe (though surprisingly he asserts that Christian in *Pilgrim's Progress* has no armour, which suggests careless reading; Christian is harnessed from head to foot before leaving the Palace Beautiful). He would perhaps have been less likely to categorize *Robinson Crusoe* as a secular work if he had known something about 18th-century dissent.

The chapter on *Clarissa*, the most interesting in the book, illustrates the strengths and weaknesses of his method. Damrosch is right to emphasize the importance of religion in *Clarissa* and its neglect in some recent studies, and he is helpful on the issue of Clarissa's pride and on the satanic attractiveness of Lovelace. However, Puritanism is not the correct framework within which to read the novel, as Damrosch seems to be aware; he comments: "A traditional Puritan would be much more skeptical than Richardson is about Clarissa's 'perfection', and about the extent to which she has the right to assert the purity of her unblemished will."

This is true; but despite such observations Damrosch continues to read the novel in the light of Puritan (or Reformation) ideas. His interpretation of Clarissa's treatment by her father and grandfather illustrates his difficulties. He suggests that Harlowe is "a dreadful parody of the Augustinian God", "a figure out of [the Puritans'] worst nightmares", and that grandfather Harlowe too is "a version of Calvin's God" because of his "arbitary election" of Clarissa. But Richardson was writing in a religious context in which works, duties, ethics, and the pursuit of Christian perfection had virtually replaced the traditional Reformation concern with sin and justification by faith. Harlowe fails in his duty as a father; grandfather Harlowe chooses Clarissa over his other descendants precisely because of her merit. It would have been more helpful if Damrosch had explored the development of Anglican thought in the first half of the 18th century and related *Clarissa* to the contradictions between what were essentially two rival versions of Christianity.

Isabel Rivers

Dr Rivers is a fellow of St Hugh's College, Oxford.

The rest is silence

The Letters of John Clare
edited by Mark Storey
Clarendon Press: Oxford University Press, £48.00
ISBN 0 19 812669 7

When John Clare died in 1864, the writer of an obituary article posed a question that, even until recently, might have seemed prophetic: "But who was John Clare?". It is testimony to the extensiveness and energy of recent editorial work that this question now appears increasingly redundant. Since 1979, at least eight different editions of various aspects of his poetry and prose have appeared, in addition to three book-length interpretations of his work – and to this list Mark Storey's new edition of Clare's letters is an important addition.

When J. W. and Anne Tibble compiled their transcriptions of Clare's correspondence over thirty years ago, it was avowedly a representative selection, some 249 items. Storey has properly cast his net much more widely, to present almost double that number; and he has also included twenty or so letters written to Clare, notably by his publisher, John Taylor, but also by his children and (movingly so) by his wife Patty. The result is a fine and valuable edition, impressive both for the comprehensiveness of the material presented and for the scrupulous attention paid to textual detail and explanatory comment.

What view of Clare, what sense of the man and his world, emerges from his letters? It's a sense above all of fullness and range in his experience, and of clarity and directness in his characteristic response to it. As Storey points out in his introduction, even a single short letter can reveal Clare engaged in a multiplicity of concerns: his views about London, the sending on of two new poems, a reminder about a promised violin, regards to be conveyed to Keats and other friends, requests for further copies of his newly published book. And such variousness informs the correspondence as a whole.

At one end of the range, one finds local details about the ordinary, domestic routines of village life in Helpston during the 1820s and 30s; then elsewhere, the larger issues of financial, emotional and editorial independence or dependency as Clare confronts the urban world of business and patronage; and finally, at the other end of the spectrum, the references beyond the momentary to the momentous – the recognition that his "thoughts are hussled up in half stupifying dreamings", the asylum letters written in code, the bare drained conclusion in his last extant letter that silence is now the only possible response to his condition: ". . . I have nothing to communicate or tell of & why I am shut up I dont know I have nothing to say so I conclude yours respectfully John Clare". But the impression of ebb and flow in such variety

John Clare

is underpinned constantly by the quality of clear-sighted vigour in his responses. Without sentimentality or rhetoric, he sees centrally and four-square, whether talking about a gift of apples from his garden or about his "numbd mind" and "broken memory".

In common with recent editions, Storey has here retained the vagaries of Clare's spelling and punctuation; and his editing of what are sometimes very difficult manuscripts is exemplary, in both approach and execution. The apparatus of scholarships, moreover, is never allowed to obtrude; and not the least of the virtues of the book is Storey's concern to place textual fidelity within a wider context, the lived fluidity and continuity of Clare's experience. To this end, the inclusion of letters written to him, the frequent cross-references provided, and the wealth of explanatory comment in footnotes help to body forth the larger world surrounding the correspondence. Given the richness of this material, it is not surprising that the edition runs to over 700 pages, nor perhaps that its price is £48. One can only hope that the latter fact will not obscure the former, for this will unquestionably become the standard edition of Clare's letters for the foreseeable future.

Tim Chilcott

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Pointing a moral

The Fable as Literature
by H. J. Blackham
Athlone Press, £18.00
ISBN 0 485 112787

What is a fable? Half a dozen thoughts spring immediately to mind: an Aesop story; a story about animals; a story with a moral; a "fabulous" story; a story that "says more than it seems to". Several dozen doubts, however, follow these thoughts all too quickly.

Is the Grimms' tale of "The Wolf and the Seven Little Kids" a fable? H. J. Blackham says that it is, or at any rate that it does "the work of a fable" in spite of its fairy-tale form. But then he says elsewhere that a fable "has a message", must have "unmistakable meaning", and the meaning-message of the Grimms' tale remains obscure. Never give up hope? Don't open the door to strangers? Perhaps, if one thinks of the wolf, never loiter after you've made a killing. Is "The Prodigal Son" a fable? It seems to make the same sort of point as "The Fox and the Grapes" or "The Dog in the Manger". Nevertheless Blackham would prefer to leave it out, on the ground that it arises too evidently from a particular situation. Still, pounce on fables to make particular points all the time. Evidently defining "the fable" must turn very much on test-cases and on borderlines.

These are, however, on the whole avoided in this book, for reasons that soon emerge. On the one hand it is clear that the author very much wants to write about some books that are only fables by courtesy, like *Venus and Adonis* or *Nineteen Eighty-Four*. On the other he feels bound to discuss many works which are clearly fables, but interest him only as parts of a historical survey from Greek antiquity to now. This latter drive indeed gives the reader many helpful references, as also many errors of the usual survey type (false dates and perfunctory judgements). Yet it is when his attentions are truly roused that Blackham's misconceptions become most unsettling.

To take another test case, is *Watership Down* a fable? Blackham will not have it so, probably rightly. But the reason he gives is that fables cannot have "heroes" or "villains", a rule which would immediately exclude *Animal Farm*, which he is determined to retain. What Blackham means, perhaps, is that *Watership Down* just has too many characters, and has lost the "stripped-down" quality of fable on which he comments elsewhere. However it looks also as if Blackham – not a critic by trade but a philosopher – has a relatively elementary notion of "how stories mean". He is quick to assert that fables, however message-laden, cannot be reduced to single maxims, and novels of course even less so. Yet going on from there he seems to have a category in mind of the completely meaningless or maxim-less fiction which is there only for plot or for amusement; and to put in this not only *Watership Down* but also the entire science fiction genre apart from a few rescued classics.

But can any science fiction story have "no application to present behaviour"? I doubt it; the writers are too skilled at working them in. Admittedly few will be as pointed as *Animal Farm*, but then Blackham betrays a certain embarrassment over that story's very pointedness, insisting that we should not see it as a "critique of views" (ie views of the Soviet Union), but as "a display of behaviour", something more safely timeless. This is to miss out, though, a large part of any reader's experience of *Animal Farm* or *Nineteen Eighty-Four* or even *Watership Down*, namely a groping round for any experience this fiction will fit.

It looks as if Blackham on the one hand wants to keep fable clear of allegory: hence the generalizing of *Animal Farm*, the distinct impatience with Robert Henryson, who added a "moralitee" to every "fabill", but tiresomely made the moralities very much part of the fables' charm. On the other hand he does not want meaning to go leaking into mere story: so the dismissal of *Watership Down*, or again the whole medieval genre of *fabliau*, fable's "bastard offspring" (we are told), "not legitimated by . . . serious purpose", there "for amusement simply". Neither of these discriminations will hold water; and Blackham has fought shy of the essentially critical job of analysing borderline cases.

A final point is that the "modern instances" of chapter four seem to have been selected largely for their liberal politics. Nothing is said of T. H. White, whose animals even read fables to the Wart; of C. S. Lewis, who rewrote the famous "Ass in Lion's Skin" for his own purposes in *The Last Battle*; or of Kipling, whose "The Mother Hive" is just one more twist on the age-old fable of the commonwealth of the bees. "There has been this gap in the critical literature", remarks the preface. Much of it, alas, remains.

T. A. Shippey

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Greek gifts

Keats and Hellenism: an essay
by Martin Aske
Cambridge University Press, £22.50
ISBN 0 521 30561 6

Keats's Endymion, according to a notorious review in *Blackwood's Edinburgh Magazine*,

> is not a Greek shepherd, loved by a Grecian goddess; he is merely a young Cockney rhymester, dreaming a fantastic dream at the full of the moon . . . No man, whose mind has ever been imbued with the smallest knowledge or feeling of classical poetry or classical history, could have stooped to profane and vulgarize every association in the manner which has been adopted by this "son of promise".

Today this tradition of sniping at the Greekless Keats's attempts to recreate "the beautiful mythology of Greece" through his *classical handbooks* has been largely replaced by a critical sentimentalization of his supposedly *temperamental rather than* acquired affinity with the Greek spirit.

Martin Aske's essay eschews any purist or *impressionist attempt* to celebrate the Greekness or otherwise of Keats's imaginings. It reads Keats's Hellenism *rather* as the site of a "psycho-historical" problem over the modern poet's vocation, a means of exploring his *own sense* of belatedness. As a reading of Keats this is familiar enough ground: a poet who confesses *explicitly to an aversion* to writing induced by "the overpowering idea of our dead poets" is naturally a favoured *exemplum* of the anxiety of influence. The strength of this essay is its relation of this emphasis specifically to the idea of the *Hellenic*, officially situated for Keats and his contemporaries as for many generations to come in the "noble *simplicity* and sedate grandeur" of Winckelmannian aesthetics, and most tangibly in the newly acquired Elgin marbles, before which Keats figures himself as "a sick eagle looking at the sky".

The result for Keats is to confirm a reading which gives priority to the "Cockney" floweriness of *Endymion* over the monumental and Miltonic style of *Hyperion*, and which sees that poem's failures – its incompleteness and the collapse of its style – as a critique of the dominantly masculine discourse of neoclassical Hellenism. The ironies of *Lamia* ("Antiquity Decomposed") then fall into place as a repudiation of the enchantment of the past, a spell already severely compromised in the linguistic over-burdening of the *Ode to Psyche* and the *Ode on a Grecian Urn*.

It would be misleading not to point out, however, that this is an essay committed at least as much to expressing its own very contemporary critical affiliation as to exploring Keats's relation to the past. Even for readers sympathetic to the language and methods of the Yale school the tendency to wave the flag on every page is likely to detract from the cogency of the central insight, and it hns to be said that Aske's approach to Keats's "parergonal" art often suggests readings more persuasive than those explicitly drawn out. There is a touch of Dick Miniin in this fusion of Derridean unrestraint with the soberer modes of British practical criticism: Johnson's "investigutor of hidden beauties" might have appreciated the *alpha* and *omega* of "O *Attic* shape" or the latent presence of the poetic "I"/eye in words like "brightest", "lyre" and "fire". Nevertheless, if the book is unlikely to make many converts to the deconstructive Keats, it does offer a suggestive *alternative methodology* for the study of the classical tradition.

Penelope Wilson

Penelope Wilson is a fellow of New Hall, Cambridge.

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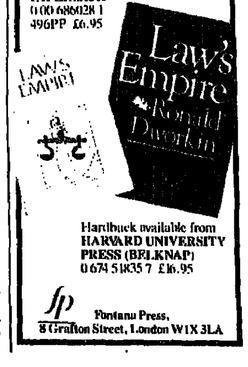

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BOOKS

Practical wisdom

Philosophical Profiles: essays in a pragmatic mode
by Richard J. Bernstein
Polity Press, £25.00 and £8.50
ISBN 0 7456 0226 6 and 0243 6

In this collection of essays Richard Bernstein offers an agreeable tour of some of the most interesting and controversial landmarks of recent philosophy and social theory. In his panorama of "the current philosophic scene", he surveys and criticizes leading contributions by thinkers at or near the centre of contemporary debate: Richard Rorty, Hans-Georg Gadamer, Jürgen Habermas, Alasdair MacIntyre, Charles Taylor, Herbert Marcuse, Martin Heidegger, Hannah Arendt, and John Dewey. Bernstein's insights and critical reflections are always stimulating and intelligent. His essays can be recommended as providing as good an introduction as any to the sorts of issues and concerns that have excited interest in the work of theorists like Rorty, MacIntyre, and Gadamer.

Bernstein is always seeking out the common ground shared by the authors he treats; always on the look-out for times of convergence. There is certainly some virtue in this, confronted, as we are, with a highly fragmented intellectual culture. On the other hand, there is perhaps a price to be paid for this practice of philosophical diplomacy. To employ the metaphor shared by several of Bernstein's authors: the most engaging conversations are those where the differences of opinion are sharp and vigorous rather than muted or pacified. Bernstein, in his efforts to mediate the various disagreements, sometimes runs the risk of succeeding so well that the conversation terminates in the bland conclusion that conversation is a good thing.

The essays, diverse as they are, revolve around a common core. One might designate this core by referring to the idea of *phronesis*, or practical wisdom irreducible to rule or decision procedure. The classic exposition of *phronesis* is contained in Book Six of Aristotle's *Nicomachean Ethics*, but it has been resuscitated in contemporary thought, thanks to the philosophical efforts of Gadamer, MacIntyre, and Taylor, among others. Bernstein is committed to this revival of the Aristotelian idea, for it represents a "type of practical reasoning . . . which does not make any appeal to ultimate foundations, eternal standards, or algorithms". Bernstein, in common with Rorty, sees this judgmental, non-algorithmic reason as not confined to the domain of moral or political knowledge but extending also to the modes of natural scientific investigation. Here Bernstein appeals to the "hermeneutical" turn of recent philosophy of science, beginning with Kuhn. Scientific knowledge is not the application of rules of method, but rather the exercise of judgment in the light of exemplars. Bernstein's point is that the natural sciences and the human sciences "turn out to be methodologically at one, not for the positivist reason that there is no rational place for hermeneutics, but for the radically opposed reason that all sciences are equally hermeneutic".

Since Gadamer, in his remarkable writings of the last 25 years, has done more than anyone to revive the theme of *phronesis*, Bernstein's theoretical encounter with his work is especially illuminating. It is with a certain note of surprise that Bernstein detects "a latent *radical* strain" in Gadamer's thinking. But such radicalism should hardly be unexpected in a declared follower of Heidegger (unless one takes the term "radical" in a very banal sense). According to Bernstein, Gadamer "radicalizes" the traditional notion of *phronesis* by purging it of the elitist connotations that it has had "from the time of Aristotle through Burke right up to the contemporary vogue of neo-Aristotelianism": "Gadamer softens this elitist aura of *phronesis*" by blending it with Platonic and Hegelian motifs. Yet it seems to me somewhat off the mark to ask, as Bernstein does, what has greater weight in Gadamer's thought, his "conservative strain" or his "radical strain". Bernstein offers no specific evidence of Gadamer's supposed conservatism, whereas the radicalism is very manifestly present in the incisiveness with which he questions the grounding assumptions of modernity.

Bernstein wishes to pose the challenge of whether the mere appeal to practical wisdom or prudence is sufficient if our contemporary moral and political situation is as conflict-ridden and fractured as MacIntyre, say, describes it. Here Bernstein cautiously takes sides with Habermas in his famous controversy with Gadamer. *Phronesis*, Bernstein states, presupposes a stable community of judgement that guides us in the appropriation of traditions. But it is just this context of "shared *nomoi*" that is presently lacking. This statement of the problem is strongly indebted to MacIntyre's presentation of Aristotelian ethics. What Bernstein wishes to infer from this analysis is that a critical social theory like Habermas's is needed to make good the deficiencies of a *phronesis* no longer rooted in a unified ethical tradition. Gadamer's reply to this, I think, is that regardless of whether our moral and political predicament today is or is not as intractable as it appears in MacIntyre's account, a systematic social theory of the type that Habermas offers will in any case do little to surmount the problem. (Rorty makes the same point.) For the problem does not admit of *theoretical* solutions, but must be tackled at the level of shared experiences and solidarities of *praxis* in all their concreteness.

As summed up by Gadamer in a very telling formulation (which I paraphrase): science may be disciplined by *phronesis*, but *phronesis* cannot be disciplined by science. At any rate, as Gadamer points out in a published letter in response to two of the essays in this collection, there is nothing unique about the conflict of traditions we are experiencing today: "*phronesis* is always the process of distinguishing and choosing what one considers to be right".

As Bernstein says, the central problem of our civilization is that it tends to undermine "the very possibility for the exercise of *phronesis*". In light of this fact, diagnosed so acutely by Gadamer himself, Bernstein demands that attention be given to "the question of how we can nurture and foster the types of community required for the exercise of *phronesis*". To this Gadamer would answer that it is not for a philosopher or mere theorist to prescribe "what is to be done". The presumption of theorists that they might reconstitute the vanishing *ethos* of a society lends to, in his words, "a terrible intellectual hubris". Gadamer takes to heart Heidegger's statement at the end of the *Letter on Humanism*: "It is time to break the habit of overestimating philosophy and of thereby asking too much of it". It is this understanding of the limits of theory that ultimately defines the emphasis on *phronesis* that Bernstein both appeals to and criticizes.

Ronald Beiner

Dr Beiner is associate professor of political science at the University of Toronto.

A detail from Jean-Baptiste Carpeux's statue *La Danse*, which is now at the Musée d'Orsay in Paris. The picture is from *Carpeaux: sculptor of the second empire* by Ann Middleton Wagner published by Yale University Press at £35.00.

Acting out rules

Wittgenstein; Rules, Grammar and Necessity
An Analytical Commentary on the Philosophical Investigations, volume two
by G. P. Baker and P. M. S. Hacker
Blackwell, £29.50
ISBN 0 631 13024 1

The first volume of Baker and Hacker's commentary was published six years ago, a weighty 700 pages on §§1–184 of the *Investigations*. Their second volume covers §§185–242, taking 350 pages to discuss 14 pages of Wittgenstein. The authors' defence of this extraordinary ratio of commentary to text is that the sections in question are much misunderstood yet are crucial, both to Wittgenstein's philosophy of mind and to his philosophy of mathematics. The new volume takes the same form as the first one, with six long discursive essays interspersed with section-by-section exegesis. The detailed scholarship is impressive; but the overall interpretative endeavour is much more questionable.

Baker and Hacker are at their worst when alluding to other philosophers – almost always to accuse them of falling into confusions supposedly exposed by Wittgenstein (I say "alluding", for the authors adopt an irritatingly lofty tone and almost never engage directly with the work of others). Many of these criticisms badly misfire. It is not do simply to assert, in criticism of modern essentialist doctrines, that everything in actual usage can reveal the supposed difference between necessary and contingent *a posteriori* propositions. For the distinction is arguably rooted in facts about the use of subjunctive conditionals and related modal idioms. Again, it is just wrong to claim that "all logicians" think that an antecedent logical semantics determines the validity of inference rules, rather than holding the rules to be constitutive of the meanings of the logical constants. We can readily multiply examples of similarly sweeping misjudgements.

Readers of Baker and Hacker's other books will not be surprised to find them offering cavalier misinterpretations or tendentious oversimplifications of other writers. In the present context this could well be forgiven, if their overall interpretation of Wittgenstein himself were rewarding and insightful. However, I can only record that – at the general, strategic level – I found Baker and Hacker frequently unhelpful and sometimes positively misguided.

To take just one instance, what are we to make of their emphatic insistence that Wittgenstein's essential problem-dissolving insight is that the relation between a rule and the acts which accord with it is an *internal* one? This cannot be the right point to focus on. Of course, we can agree that there is an internal relation here: the rule "add 2" would not be the rule it is if writing "1002" after "1000" were not in accord with it. But how is this observation supposed to relieve our puzzlement about rules? Surely we are still left with exactly the problem that Wittgenstein was addressing, which we can now put as follows: in virtue of what do the *marks* or *sounds* "add 2" express that particular rule, given that the use of those marks up to now, the set of applications we have so far allowed, is compatible with their expressing any number of rules (each of which is indeed internally related to what is in accord with it)?

Wittgenstein's key insight in this area is, I venture, to be located elsewhere. The existence of determinate rules is possible, he argues, because we are beings who engage in practices which do not themselves involve the application of rules; in the end, we just act, without rule or reason. To put it telegraphically: at bottom, our practices give rise to the existence of rules, rather than vice versa.

When we move from philosophical generalities to scholarly exegesis of particular sections, things improve. For instance, one area where Baker and Hacker's archaeological spadework yields notable dividends is in their discussion of Wittgenstein's much disputed remark "It is not possible to follow a rule 'privately'" (§202). Does this mean that rule-following must always be a social activity, presupposing a community of like-minded individuals who actually share the practice (thus apparently ruling out solitary rule-following by a Robinson Crusoe). Or is there a pre-echo here of the strong notion of privacy introduced in §243; in other words, is the claim that there cannot be rules which are not merely unshared but necessarily unshareable?

In favour of the second interpretation, Baker and Hacker make two telling points. First, they note that §202 has its origins in a manuscript which already contains most of the private language argument (ie §§243–317 of the *Investigations*), and in this manuscript context the disputed remark comes *after* the argument and plainly refers back to it. So, "transposing this remark to its locus at §202 has transformed a perspicuous back reference into an opaque anticipation". Second, the question whether a Robinson Crusoe can follow a rule is extensively discussed in a number of Wittgenstein's manuscripts. Baker and Hacker show convincingly that "Wittgenstein's verdict is clear: a solitary individual can follow a rule".

Other archaeological investigations into the substrata of Wittgenstein's text prove equally illuminating; for these alone the book is worth having.

Peter J. Smith

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ence and the humanities are less different than previously thought, not (as earlier generations imagined) because the latter can approximate to the methods of the former, but, on the contrary, because the former cannot help but have recourse to the ways of insight of the latter. As Charles Taylor has put the point: the natural sciences and the human sciences "turn out to be methodologically at one, not for the positivist reason that there is no rational place for hermeneutics, but for the radically opposed reason that all sciences are equally hermeneutic".

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Theories of law

Vico
by Peter Burke
Oxford University Press, £8.95 and £2.25
ISBN 0 19 287619 8 and 0 19 287618 X

In this work in the Past Masters series, Peter Burke has achieved the very considerable task of giving a clear and comprehensible introductory account of the development and nature of Vico's main doctrines in the space of 100 pages. At the same time he has also taken the opportunity to argue against the idea that Vico's originality was such as to justify the view that, as has often been claimed, he was a man born out of his time.

Burke sees that claim as arising from the fact that the distinguished thinkers influenced by Vico – Michelet, Croce, Joyce, Cassirer, Collingwood, Auerbach and Isaiah Berlin among them – have tended to overemphasize those aspects of his theories by which they have been attracted, thus giving them a disproportionate prominence in their interpretations of his thought as a whole. Even the existence of a very extensive school of Vico scholarship seems not wholly to have overcome this defect, although it is evident that Burke has himself drawn on some of his scholarship in his own attempt to do so.

The approach which Burke adopts to remedy this is to set Vico very firmly in his historical and cultural context, both that of the highly eclectic, free-thinking Naples of the late 17th and early 18th centuries, and of the classical and Renaissance learning to which Vico is known to have had access. Surprisingly, however, little new light is thrown on Vico's development in Burke's account, possibly suggesting that he has overestimated the ahistorical character of previous accounts. Vico still appears as a thinker initially captivated by the rationalism of Descartes and Plato, but coming to reject that of the former, in particular, as his acquaintance with the political thought of Tacitus and Machiavelli, the empiricism of Bacon, and the legal thought of Grotius, made him aware of the need for a philosophy which could contribute to ethics, politics and law. His first attempt to provide this was his *Universal Law*, a work intended to show the relationship between law as an ideal system and as an historical fact. This attempt forced him to discuss the history of language, literature and religion, the meaning of the Greek myths, the interpretation of Homer and, in general, the history of the development of human nature. But Burke accepts that Vico never makes it explicit why his project should require all this.

By the time of the *New Science*, Vico had come to realize that law could be understood only in its complete cultural and historical environment. In the first edition (1725) and the heavily recast later editions (1730 and 1744) he tried to provide both the substantive principles of world history and the methodological and epistemological principles required for knowledge of it. Given the enormous content of the work, Burke is forced to concentrate on four aspects: Vico's theories of law, of language and myth, of the necessary course of history, and of the scientific status of the work. Here his historical approach involves him not in denying Vico's originality but in seeing the latter as consisting in his capacity to provide new answers to existing questions rather than as devising wholly new questions. Thus, in law Vico is seen as mediating between over-rational, ahistorical theories and historical, over-voluntarist theories; his account of the mythic consciousness is seen as a distinctive version of a kind of theory already in existence; his idea of a cyclic pattern in history is not itself new but his account of the phases of the pattern is; and finally the *New Science* is scientific in the sense which the Roman jurists understood – of seeking to reveal an order implicit in a multiplicity of cases.

Burke is surely right in locating Vico in his context and has done so with skill, given his limitations of space. My only serious reservation is in his treatment of the *New Science*, where he gives insufficient prominence to its principal theme: that human consciousness is an historical and social product which expresses itself in the total life of a nation at every phase in its career. It is this thesis which unifies the many different aspects and which provides the clue to Vico's astonishing capacity to find fundamental and enlightening connections between the most disparate of phenomena. Burke's failure to highlight it obscures the greatness of Vico's achievement.

Leon Pompa

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BOOKS

Toxic hazards

Controlling Chemicals: the politics of regulation in Europe and the United States
by Ronald Brickman, Sheila Jasanoff, and Thomas Ilgen
Cornell University Press, $38.45
ISBN 0 8014 1677 9

Any sustained discussion of British policies for the control of toxic chemicals – or indeed of any other issue involving technological risk – will inevitably include reference to "how the Americans have done it". Again and again, criticisms have been voiced of the closed, consensual and confidential style of British rule-making compared with the more open, adversarial and participatory approach typical of American regulatory processes. Repeatedly also, American data about health hazards have been used as a lever within European discussions – data made available by the Freedom of Information Act, the very title of which sets it in stark contrast to the British Official Secrets Act. The implication of all this has been that we Europeans need to emulate much of current American practice if we are ever to meet the demands of the new generation of technological risks.

It is into this swamp of politically-loaded characterizations and sweeping generalizations that the authors of this book have chosen to journey. More specifically, their goal has been to identify significant areas of convergence and divergence between the United States, Britain, France and West Germany as regards the control of chemical – especially carcinogenic – hazards. *Controlling Chemicals* explores this international comparison via an analysis of public policies for food additives, pesticides, chemicals in the workplace, and industrial chemicals in general. The argument here is that such comparative studies can serve an important practical purpose by drawing pertinent lessons from current experience.

What major differences become visible once one delves into this broad comparison? Taking simply the United States against western Europe, a number of substantial disparities can be found. The American courts have exercised a far greater influence over decision-making than their European counterparts. Similarly, whereas the United States Congress has intervened repeatedly in matters of hazard control, the British Parliament has been largely satisfied to leave such matters to technical experts and civil servants. The greater politicization of debate in the United States is reflected in the plethora of public interest and industrial pressure groups currently vying to be heard. As part of this greater debate about chemical control, the United States has also spent more on scientific research into toxic hazards, so that America has effectively subsidized the information-seeking efforts of the rest of the world.

All the above points have been seized on by groups in Europe who are dissatisfied with the apparently complacent and "business as usual" attitude of European regulators. However, what the authors suggest instead is that the highly divisive and deeply entrenched nature of American regulatory processes has merely succeeded in producing a policy output roughly equivalent to that of western Europe – albeit at a far greater financial and political cost. The United States has, in short, simply run at a much faster pace in order to arrive essentially in the same place. Accordingly, the authors are far more eager to borrow from the experience of countries like Britain than to praise the glories of the American approach. Of course, the book recognizes the Jeffersonian virtues of a more open and democratic decision-making style, but wonders whether the present price may be too dear.

There is no doubt that *Controlling Chemicals* tackles a crucial issue. Inevitably, the sweep across four nations leads to over-generalization. British "regulatory style", for example, is not uniform but varies from the tripartite structure for occupational hazards to the strictly expert model for pesticide risks. At times also, the background research looks a little dated, reflecting the situation in 1980 rather the changed political realities of the mid-1980s. But this only seems to underline the dynamic nature of policy processes as opposed to the somewhat static notion of national styles. The most controversial aspect of the book, however, is its contention that little disparity exists in the final output from the different regulatory approaches. More evidence is needed to substantiate such a claim.

This book raises a number of vital questions for the control of technological risks. In particular, its comparative analytical approach offers a valuable new perspective to all those who seriously wish to understand how regulatory policies have developed and, more importantly, how present strategies might actually be improved.

Alan Irwin

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This photograph of Eng and Chang, the original Siamese twins, is taken from *The Flamingo's Smile: reflections in natural history*, a further collection of essays by Stephen Jay Gould (Norton, £12.95).

Measuring human variables

Human Experimental Psychology
by Joan Gay Snodgrass, Gail Levy-Berger and Martin Haydon
Oxford University Press, £30.00
ISBN 0 19 503574 7

At a time when relevance and "ecological validity" are fast becoming the new idols of academic psychology, it is refreshing to come across a book extoling the good old virtues of pure experimentalism. It has, of course, long been recognized that behaviour studied under controlled laboratory conditions is not the same as behaviour that occurs in natural environments. But 20 years ago this fact would have been shrugged off either as an irrelevance ("psychology is a pure laboratory science, not an applied one") or as a problem for the future ("as experimental work becomes more complex and sophisticated, it will be possible to model real, world tasks in the laboratory").

Now that the future has arrived, and we are not much closer to reaching that implicit goal, there has been a gradual but clear shift of interest. Experimental psychologists, once the high priests of laboratory research into artificial mental tasks, are beginning to turn to the study of the naturalistic equivalents of their chosen fields: decision theorists look at occupational choice; students of information processing move over to "cognitive ergonomics"; and short-term memory men turn their attention to memory deficits in the aged or in stroke victims. Even the staunchly loyal students of animal conditioning are talking about ecological factors and species-relevant behaviour.

Where does all this leave the teaching of methodology? As long as psychologists were primarily concerned with the effects of physical variables on behaviour (for example, noise levels on speech perception or word-list length on memory performance), we knew where we stood: the appropriate research design was the classical experiment and the appropriate statistical technique the *t* test or analysis of variance. But the new approach calls for a far more eclectic attitude to research methods: natural behaviours are influenced by many more independent variables than the laboratory task; the variables themselves – often personal and social factors – cannot easily be manipulated and they are usually inter-correlated.

This means that the controlled experiment has to give way to correlational study in which naturally occurring changes in a set of variables are measured but not manipulated. It also means that the simple statistical techniques suitable for an experiment must be supplemented by multivariate methods designed to disentangle the effects of many inter-related variables acting simultaneously. In short, present-day students need to be taught a much wider range of methodologies straddling the experimental-correlational divide, to be used sensitively in response to the demands of particular research problems.

Those who favour this more flexible, problem-oriented approach, will draw little comfort from the present text. It is firmly located within the experimental tradition and consciously excludes the treatment of any other research design. The basic idea is to control all the variables operating on the subjects' behaviour, except for the one being manipulated, and then to show statistically that changes in behaviour associated with the manipulation are too large to be reasonably explained by random, uncontrolled factors. The authors take almost 500 pages to expound this principle. Even allowing for the formidable problems associated with experimental work on human beings, this is slow going.

But the book does more than cover basic experimental design and statistics. It is a methodological sandwich. Part one talks about design principles (including a useful section on pitfalls), measurement and psychophysics, while part three follows up with a detailed discussion of procedural issues (choice of subjects, apparatus, stimuli, and so on) and fairly comprehensive coverage of elementary statistics, including one-way and two-way analysis of variance and the more popular non-parametric techniques. Part two, the filling, consists of a 180-page exploration of substantive research in experimental psychology, including historical and recent work on perception, learning, motivation, memory, thinking, and problem solving.

The authors claim to integrate effectively "the content of experimental psychology with its methods", but I found very little evidence of this. Indeed, in some areas, such as the discussion of attention and schizophrenia, non-experimental methods are introduced without comment, let alone serious discussion of the interaction between method and content. That apart, the survey of research is very clearly written, sensibly selective, and interesting. It is pitched at an introductory level, but goes deep enough to expose contemporary problems, leaving the reader where appropriate in a healthy state of uncertainty.

The methodology sections are also clearly presented and unusually comprehensive for an introductory text – including, for example, treatment of the stimulus generalization problem in verbal research and, at a statistical level, the treatment of missing data and extreme scores. At the same time, however, some important distinctions are not properly drawn, as for example the difference between uncontrolled, random variables and those which are systematically confounded with the experimental manipulation. This particular confusion leads the authors to the bizarre suggestion that all subject variables that might affect performance should be explicitly balanced across experimental conditions or otherwise held constant – a proposal that is utterly impracticable and ignores the purpose of randomization.

Notwithstanding what must be regarded as the occasional methodological lapse, this book provides a good and comprehensive introduction to the methods, concepts and excitement of modern experimental psychology. I doubt whether this is a sensible way to package the skills and orientations of future psychologists, but for those committed to the ubiquitous introductory laboratory course this book is a useful prop.

Stephen Miller

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A path to groups

Groups: a path to geometry
by R. P. Burn
Cambridge University Press, £27.50
ISBN 0 521 30037 1

A potential pitfall in a university course in pure mathematics is to concentrate attention on the abstract, with some "real" examples thrown in to justify a long string of definitions and theorems. It is often better to start with a number of examples and show how they all form part of a general theory. This is how much of mathematics has developed, and it is one of the first things which we should emphasize to students – it is only the isolated genius who can prove a theorem or develop a theory which *then* proves to be important. Such a point of view is especially relevant in "modern" mathematics where the idea of a group is central to a number of topics, from its pure roles in algebra and geometry to the applications of symmetry that arise in physics and chemistry.

What is a group? This book does not tell us immediately. With its development from the concrete to the abstract, the formal definition does not appear until page 62. So it does not come as something weird and (not so) wonderful – it is what we are led to expect. We are first trained to ask what group theory is *about* by looking at examples drawn from permutations of finite sets and then of infinite sets, in the latter case by studying various geometrical examples so that, for example, the Platonic solids are discussed and their groups of symmetries considered. Once abstract groups are defined, however, the standard results which should be covered in a first course are obtained, although these are well interlarded with the further development of concrete examples which arise from linear algebra and geometry.

What distinguishes this book from all others? Simply, it is not a textbook in the normal sense. The approach of the book is one of development by discovery. There is almost no text as such – the reader being invited to learn about groups through a sequence of over 800 problems. Often he or she is asked to give a reasonable definition based on his or her experience in preceding exercises. However, although this provokes a suitable amount of thought, the answer may not be clear to the totally naive reader. But he is not left to his own devices, as each chapter contains the solution to problems, together with a summary of the definitions and theorems covered by the exercises and a historical note. Most of the chapters also begin with a preamble outlining the perspective and a note of some more conventional concurrent reading.

This book should appeal to two types of reader. The first may have some acquaintance with groups but will want to discover what the subject is really about. One of the goals is to provide "insight into transformation geometry as it is now done in British schools". Would that this were done and done well. Some school children who profess an interest in group theory seem to regard it as consisting of a set of abstract axioms which allow you to write down multiplication tables and manipulate symbols, and no more. Others have studied "transformation geometry" but have developed a sloppiness in thinking, where proof is replaced by the description of a proof. This book expects rigour. So it will be a valuable book for many teachers, present and future. It should also appeal to mathematics students as a useful source of exercises alongside conventional texts.

There are certain minor weaknesses if the book is read in isolation. Only A-level mathematics is assumed. If armed with this alone, the reader may encounter severe difficulties with the very first problem. Following current algebraic practice, the author writes his functions on the right, but nowhere does he warn the unwary reader for whom this may be totally novel. Injections then have right inverses and surjections left inverses. These theorems are set as exercises. Unfortunately, in the summary at the end of the chapter, the definition given for a function allows one to write it on either the left or the right, whereas for the above theorems it does matter. Furthermore, although the summary contains the layman's view of what a function is, namely the concept of assigning an element of the codomain to each element of the domain, the examples on which the reader is invited in problem one to base a definition explicitly give each function as a set of ordered pairs, whereas Cartesian products are defined only in problem two. You cannot get around this by simply saying that a "function is defined when . . .". A lesser problem arises over the author's concern for historical accuracy. His meaning of "linear fractional group" may have been introduced by Möbius, but group theorists today tend to follow that of Dickson's book on linear groups which appeared in 1901.

There is much here of value both for students and for those who are seeking a refresher course in modern group theory. The book could equally well have been entitled *Geometry: a path to groups*, and it serves as a good reminder of the close relationship between the two subjects.

Michael Collins

Michael Collins is fellow and praelector in pure mathematics at University College, Oxford.

BOOKS

ECONOMICS

Promoting a cause

Milton Friedman: a guide to his economic thought
by Eamonn Butler
Gower, £15.00 and £6.95
ISBN 0 85117 262 8

In speaking to the Labour Party at the annual conference in 1976, Prime Minister James Callaghan announced the arrival of Professor Milton Friedman's influence on UK macroeconomic policymaking by rejecting the idea that "full employment could be guaranteeed by the stroke of a Chancellor's pen." The option of "just spending your way out of a recession no longer exists" and "in so far as it did exist, it worked by injecting inflation into the economy." This monetarist view could not have been put more succinctly, even by Friedman.

Some ten years later we can see, with the benefit of hindsight, that the mid-70s marked a watershed in economic policy-making in the UK. Indeed the 1976-86 decade has witnessed the dramatic rise of monetarism in political circles although as a progressive research programme the major impact of monetarist ideas within academia had occurred in the period 1956-76. It is perhaps fitting that 1976 was also the year that Friedman was awarded the Nobel prize for "his achievements in the fields of consumption analysis monetary history and theory, and for his demonstration of the complexity of stabilization policy." Much of his book is devoted to explaining the theories and research which earned Professor Friedman this ultimate accolade.

Dr Eamonn Butler has succeeded remarkably well in the task he set himself in writing this book for as the author notes, Friedman's writings are to be found in diverse places and pitched at every level. Thus Butler has produced a one-volume work outlining the main points of Friedman's analysis as well as some of the major critiques made by his opponents. This book is not only an enjoyable read but also provides a useful guide to those who wish to know more about Friedman's influential ideas.

The author is presently director of the Adam Smith Institute, a public policy research foundation operating in Britain and the USA. Given this position it might well be expected that the book would have an evangelical flavour. However, the author, while not dispassionate, presents his assessment of Friedman's work in a tone of quiet praise. The lack of sharp criticism is compensated by the clear presentation of Friedman's wide range of published material. The lucid style should enable both students and intelligent laymen to understand the gradual evolution of monetarist ideas.

Professor Friedman has come to be identified with monetarism but as Dr Butler shows, his work has ranged over a very wide area indeed. The focus of Friedman's interest in over fifty years as a professional economist has gradually shifted from microeconomics and methodology to monetary theory and the problems associated with stabilization policy.

Together with Keynes, Friedman's ideas have influenced macroeconomic theory and policy-making probably more than any other economist in the postwar period. In particular Friedman's paper, "The Role of Monetary Policy," published in 1968, has had enormous influence, and he is one of the few economists who is well known outside the profession. This is attributable, according to the author, to his "unquestioned artistry in promoting a cause". This gift he shares with Keynes who in a similar fashion used his influence to popularize a case to the widest possible audience.

Like many other great economists, such as Alfred Marshall, Paul Samuelson and John Maynard Keynes, Friedman started out his academic life with an interest in mathematics. After graduating from Rutgers in 1932, Friedman moved on to Chicago and then Columbia before finally returning to Chicago again in 1948 where he remained until the late 1970s. On route to Chicago Friedman was influenced by Arthur Burns and Wesely Mitchell, both of whom emphasized the empirical nature of economics, that economic theories must be capable of testing if they are to add to human understanding. Thus to Friedman the hallmark of a good economic theory is its predictive power. He has also demonstrated a distinct preference for simple small-scale models of a partial rather than general equilibrium nature. Hence Friedman adopts the Marshallian rather than Walrasian approach to economic analysis. It is therefore remarkable that the author does not discuss the relationship between Friedman's monetarism and the new-classical variety of monetarism associated with Professor Robert Lucas. Unlike Friedman, the new-classical school adopt the Walrasian general equilibrium framework and on several points their theories are a direct challenge to some of Friedman's most important contributions especially concerning the time lags involved with regard to the real effects of monetary fluctuations.

It is also difficult to agree with Dr Butler's claim that "Friedman's major contribution to economics is the establishment of a completely new economic model". Since most of the basic propositions of the quantity theory of money had been set out in David Hume's 1752 essay, "Of Money", this statement seems difficult to justify.

Some fifteen years ago the late Professor Harry Johnson argued that the monetarist counter-revolution would founder on the rocks of intolerable levels of unemployment. The attempt, in recent years, to explain current levels of unemployment in terms of Friedman's "natural rate" suggest that monetarism has indeed entered a degenerating phase. Nevertheless Professor Friedman has forced Keynesians to restate and remake their case for stabilization policies.

Professor Friedman is well know for his advocacy of the free market unhindered by misconceived interventions by government. If one were attempting to encapsulate Friedman's philosophy it would be that "markets work, government invariably fails". His popular expositions of free market ideology represent a concerted attack on various forms of government interference with the invisible hand. Such views place him firmly in the Chicago tradition and as the author notes "Friedman has helped classical liberal attitudes to permeate the thinking of a number of leading western governments."

Friedman's vision is to show the capitalist system in a very favourable light. In his view the market system has remarkable power in raising living standards if only government would refrain from interfering with the economic machine. For Friedman, all that is necessary is for governments to provide law and order, to enforce contracts, to establish a stable monetary environment and to protect the citizen from external aggression. From such a perspective, economic difficulties are seen not as the result of unfettered free enterprise but rather the inevitable outcome of inappropriate and unnecessary government intervention. Health care, housing and education can be best provided through the market, competition is the most effective form of consumer protection, labour unions damage the interests of workers, and Keynesianism is synonomous with monetary mismanagement. A universal system of free markets is the best way of raising the living standards of all members of society. In addition, Friedman argues that the preservation of economic freedom is an essential prerequisite for the survival of political freedom. In this respect Friedman's vision corresponds to that originally expressed by Hayek in 1944 in *The Road to Serfdom*.

Milton Friedman

Dirigiste critics point out that this Smithian vision, which is currently enjoying a renaissance thanks to Friedman, is outdated. It does not correspond to modern capitalist systems which are riddled with powerful monopolies, externalities, interdependencies, and individual actors who increasingly measure their welfare in relative us well as absolute terms.

Friedman's lowly origins as the son of poor immigrants could well have engendered within him a contempt for the exploitive nature of capitalism. It did the opposite. Milton Friedman has become the greatest living advocate of free market capitalism. For supporters and opponents alike this book is a useful guide and succeeds in its limited purpose. But those who wish to find more penetrating criticism of Friedman's work will need to look elsewhere.

Brian Snowdon

Brian Snowdon is principal lecturer in economics at Newcastle Polytechnic.

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Market forces

The British Economy
volume one: Years of Turmoil 1920–1951
by Derek H. Aldcroft
Wheatsheaf Books, £22.50 and £7.95
ISBN 0 7108 0114 9 and 0109 2

This is the first volume of what is intended to be an extended study of the British economy from 1920 to the present day. Professor Aldcroft's energies permitting (and his output to date has been prodigious) two further volumes are projected: one dealing with Britain's poor growth record during the "super-growth" era of 1951–73, and a final one on the search for stability in the contemporary world.

In this first instalment, Aldcroft has not attempted a comprehensive economic history. Rather, he has sought to investigate "some of the major economic issues and problems of the period, to debate these in the light of the many new and stimulating contributions made in recent years, some of which draw upon contemporary economic analysis, and to pay particular attention to the role of economic policy, which has been the subject of considerable controversy in the recent literature". It was the mention of "contemporary economic analysis" which caught my attention. For, hitherto, students of the 20th-century British economy have had to rely on Pollard's *The Development of the British Economy*, now updated in a revised 1983 edition to cover the period 1914–80. This work, while rightly a favourite among students, is too detailed and too conventional in its approach to contain much formal economic analysis. Here, then, was an opportunity to supplement Pollard's work with something more appropriate for the needs of the economics student and those economic historians who have not yet abandoned the greater precision of economics for the safety of the literary approach.

Such expectations were quickly disappointed. Instead, what we have here is a reworking of an earlier study, *The Inter-War Economy: Britain 1919–1939* (1970), with two chapters appended to cover the Second World War and postwar reconstruction. In neither the earlier study nor the present one is there much serious economic analysis. Not surprisingly, the focus for the interwar discussion of Aldcroft's defence of his earlier writings on economic growth and structural change (the infamous new-old

continued opposite

BOOKS

ECONOMICS

Is left right?

Britain's Economy: the roots of stagnation
by Aubrey Jones
Cambridge University Press, £17.50
ISBN 0 521 30816 X

The Economic Decline of Modern Britain: the debate between left and right
by David Coates and John Hillard
Wheatsheaf, £22.50 and £8.95
ISBN 0 7450 0107 6 and 0145 9

There are almost as many views on what is wrong with Britain as there are unemployed, and the trends are still in the same direction. These two books would appear from their titles to be about the same thing – more diagnostics on the British disease. Coates and Hillard certainly is in this mould; however, Aubrey Jones's is for the most part not about this at all. Its title is an almost total red herring.

Jones was Minister of Fuel and Power under Eden and then Minister of Supply for a while under Macmillan. He is best known for the fact that he was chairman of the National Board for Prices and Incomes (NBPI) for almost the duration of the 1964–70 Labour Government. The core of his book is a fairly detailed discussion of these three periods in office. It is in this respect much more of a political memoire than it is an economic analysis. Perhaps fortunately, he sticks very closely to his area of responsibility and does not indulge in rash judgements beyond his range of experience.

Seen for what it is the book is a valuable document. It is an insider's record of decision-making on some key issues at a particular point in time. Perhaps the most interesting of these is the question of nuclear power. This is even more controversial today than it was in the 1950s. Jones relates a comedy of errors. "The trebling of the nuclear power programme in the second half of the 1950s was estimated to raise the contribution of nuclear power to the total energy requirements of the country to around 6 per cent in 1965 and to 15–20 per cent in 1975. In 1982 the nuclear contribution was 5.1 per cent."

Jones seems to conclude from his experience with power and supply that governments need to be much better at tinkering than they were in his experience. The more obvious conclusion, however, is that they should not be tinkering at all. When it comes to incomes policy Jones is rather uncritical of the experience. He is topical in calling for profit sharing. The NBPI does not come over as an institution whose demise has been a cause of much suffering. However, he has not lost faith in the belief that we really do need an effective and permanent incomes policy. But, then, if *he* doesn't believe, who could?

Coates and Hillard have put together 35 contributions to a supposed "debate" between right and left. There are a few big names among the contributors, not the least being Mrs Thatcher. However, there is no debate whatsoever, merely a large number of independent views. Just about every view you can think of is put forward by someone. It's all the fault of the unions, the city, the government, the Treasury, capitalism, socialism, management or of course Mrs Thatcher!

If the authors think that collecting together a number of wildly differing perspectives under one cover is going to help anyone decide the "truth" they are very wrong. This collection contains such a ragbag of unsubstantiated assertions and thinly disguised prejudice that it becomes infuriating to read. The editors clearly have strong Marxist leanings and their selection of contributions betrays this. However, the weakness of both sides of the argument undermines the worth of the entire exercise.

At the end of it all, how are we supposed to decide who is correct? Coates and Hillard want to conclude that left is right. Not only do the Marxists have a block of eight papers in the collection but there is also a Marxist bias to several of the introductory and concluding chapters. On top of that it is notable that the Marxist contributions are all from active academics. The right-wing contributions are virtually all from politicians or journalists. Indeed, only one of the right contributions is from active academics (Bacon and Eltis). The next nearest is a piece from Hayek who retired many years ago. It would be a bit fairer to compare like with like. The stacking of the odds does not end there. Mrs Thatcher's piece is a speech delivered in 1968. The editors allow themselves the advantage of a paper each, written in 1985. This means that they are able to criticize "Thatcherism" but none on the other side is given the space for an up to date defence, or even an up to date analysis of any kind.

The real problem with this book is that its aim is political and its content is for the most part a presentation of political points of view. This is about as instructive as a pile of election manifestos. And yet at the heart of the disagreements are some serious issues which could in principle be settled by means of clear analysis and rigorous testing of hypotheses against data. Unfortunately the book contains little or none of this. No wonder Sir Keith Joseph (one of the contributors) insisted in taking the "science" out of "social science". On this evidence he was quite right to do so. Perhaps one more factor should be added to the list of potential causes of Britain's decline – the low standard of public discussions of economic issues.

K. A. Chrystal

K. A. Chrystal is professor of economics at the University of Sheffield.

from facing page

industries debate, now largely discredited). With its explicit concern with economic policy, we could have expected a detailed assessment of policy motives and impact. Yet the former is treated far too lightly, with no attempt made to establish a coherent structure for explaining individual policy actions within the context of the development of the managed economy.

The narrative is too episodic, and will disappoint the student who is searching for order and understanding in face of the morass of events and weight of contemporary literature. Similarly, the treatment of policy impact is most unsatisfactory. For example, in discussing the course of fiscal policy during the 1930s (which, to declare an interest, was the subject of my own recent book), it is shocking to see the constant employment budget balance introduced as a summary measure of fiscal stance without explanation or definition. The student who has not read the specialist literature will simply be baffled by this, while those who have will be disappointed by the poverty of the technical discussion.

Typically, with the textbook format, it can be difficult to identify the author's central thesis. Fortunately, this is not the case here as Aldcroft writes clearly and the book is well-structured. For the interwar period at least he is concerned to show the influence of natural market forces, rather than just policy which is judged to have received too much attention in the literature. A particular note is made of the contribution of overly high real wages to Britain's difficulties (classical unemployment), with – for once – politics being integrated with economics to show the weight of real wage resistance. Here parallels might be drawn with more recent experience, though with this and other themes his comparative exercises are muted and not particularly useful. By contrast, his treatment of the war and postwar periods does not seem to be founded upon any overall interpretation.

Throughout his career, Professor Aldcroft has had a knack of writing general books on subjects much in demand by student with his work being far more regarded by them than by his fellow academics. Given the current tendency among economic history students to eschew theory, and the crisis of the subject generally, I suspect that this book will prove similarly popular. But there is much more to economic history than is allowed for in this offering, which is a lost opportunity for a real synthesis of the recent literature.

Roger Middleton

Dr Middleton is lecturer in economic history at the University of Durham.

Inactive service industry

Slow Growth and the Service Economy
by Pascal Petit
Frances Pinter, £17.50
ISBN 0 86187 291 6

Everyone knows that recent economic history has been a story of slow growth, deindustrialization and the development of the service sector. What is not so clear is how far the expansion of the service economy is a root cause of the poor growth in the face of a shrinking manufacturing base. Petit has provided a worthwhile contribution to the debate about the consequences for growth and employment of the development of services. The principal focus of his analysis is on products and markets rather than employment per se.

On the face of it, taking a production view, the growth of services limits the growth of productivity in the economy as a whole because several services are necessarily incapable of productivity advances. Are writers more productive than they were a hundred years ago? Thus a key question is whether, in the face of deindustrialization, the service sector can generate sufficient demand to stimulate growth. A central theme of the book is that the present economic stagnation is substantially caused by a lack of demand. This interrupts the virtuous circle of extended markets giving rise, as Adam Smith argued, to increased division of labour and economies of scale, with consequent gains in productivity.

Much of the book looks in detail at the foreign, intermediate and final demand for services. Foreign trade in services accounts for only a small part of the total uses so there are limited prospects for using this to offset a relative decline in trade in manufactures. The intermediate demand for services (by firms) is also rejected as a source of potential for regeneration. Part of the expansion of the intermediate demand for services is simply an externalizing of functions, such as design and computing, previously carried out by manufacturing firms. So what about the final demand for services, by households and by government? Here the prospects of autonomous growth also seem slender because there is a high degree of complementarity to other household production and consumption activities, and the crisis in the welfare state has called into question the continued growth of expenditure on socialized health and education services. As for the dramatic advances in computer technology, the argument is that these have an impact on the way in which traditional goods and services are produced rather than on opening up opportunities for new kinds of final consumption.

Petit pursues all these arguments in a vigorous and detailed manner. His conclusion is not optimistic. Constraints on the demand for services mean that the development of such demand is unlikely to lead to economic recovery in the short to medium term, and for the longer term he argues that there is an absence of major cumulative sequences in which changes in the conditions of production and in the formation of demand help to sustain each other to establish real opportunities for stable growth.

Throughout the book the argument is presented in a careful and often stimulating way, though the reader has to work. The author, for instance, stops short of distilling the thread of his message into a conclusion, and he is rather brief on the policy implications. But this is nevertheless an interesting book and it is hard to challenge the conclusion that the future of service economies, which is what developed economies have become, remains uncertain.

Barry Thomas

Dr Thomas is senior lecturer in economics at the University of Durham.

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BOOKS

ECONOMICS

Conduct of policy

Britain's Economic Renaissance: Margaret Thatcher's Reforms 1979–1984
by Alan Walters
Oxford University Press, £19.50
ISBN 0 19 503739 1

As the Prime Minister's personal economic adviser between 1981 and 1983, Sir Alan Walters is uniquely positioned to offer an intriguing insight into economic policy formulation during this period. Moreover, unlike certain fair-weather supporters of "Thatcherite" policies, he is willing to stand or fall on the outcome of the policies implemented during this period although, as indeed the Government has always claimed, the long-term nature of the package of reforms adopted allows only an interim and temporary assessment. Accordingly, the author reserves the right to amend his judgement in the light of future evidence.

Despite this reservation he presents his views on the conduct of policy in forthright fashion, exposing the theory and ideology underlying the present Government's economic reforms, comprising the eschewal of fiscal fine-tuning and incomes policies, the implementation of a medium term financial strategy (MTFS), deregulation, "privatization" and reform of trades union legislation, to a non-specialist readership. He also stimulates the reader's interest with the occasional glimpse behind the policy-making process, his observation that many economic advisers operate in practice as "arch rationalizers" for the policy proposed by officials or ministers, for example, serving to confirm the worst fears of outside commentators. The gulf between the bulk of the academic community, steadfastly clinging to traditionally-received doctrine, and politicians is also highlighted.

The starting-point of the text is an explanation and review of the evidence relating to the conventional Keynesian wisdom on demand management. The author concludes that a survey of experience and statistical evidence suggests that the British economy has responded perversely to fiscal stimuli, a conclusion endorsed by a review of standard econometric models. As the author points out later, however, econometric evidence rarely resolves any dispute, the famous work of Hendry and Ericsson (1983) providing just one example of how readily the validity of the work of previous analysts (in this case the highly-regarded Friedman and Schwartz) can be called into question. Nevertheless, it is probably fair to say that the present consensus is that fiscal multipliers are much lower now than in the 1960s and "confidence" effects associated with the absolute size and changes in budget deficits are widely believed to limit the power of "fiscal" policy.

This, in itself, means that policies emphasizing the primacy of monetary policy and embracing "targets" for budget deficits, for which the public sector borrowing requirement (PSBR) is a proxy, receive a fairly sympathetic ear, although this is no excuse for passively accepting the policy details in non-critical fashion. For example, what precisely are the linkages between the PSBR, money supply growth (as measured by the sterling M_3 statistic) and interest rates in the short, medium and longer-term (the MTFS involved a progressive decline in the ratio of the PSBR to GDP consistent with a progressive decline in target ranges for sterling M_3 growth) and how good a measure of the pressures imposed upon financial markets by public sector activities is the raw PSBR figure? Neither question is adequately addressed in the text, although the author expresses scepticism about the merits of the various PSBR adjustments, and especially the inflation-adjustment, suggested by academics.

The next major issue tackled is that of "crowding out", or the displacement of private sector spending by public sector spending, and at this juncture the policy of "privatization" is explained. Apart from providing implicit support for the beliefs that "nationalization" normally results in an approximate doubling of costs, however, little debate is provided about the need to justify "privatization", given the considerable costs of transferring activities to the private sector, on efficiency grounds and the necessity of simultaneously raising the degree of effective competition in the market place.

Historical surveys of the conduct of both monetary and fiscal policies during the 1979–83 period are also presented, the former being supplemented by analysis of the stability of demand for money functions, the role of broad and narrow money and the exchange rate as targets, and the transmission mechanism of monetary policy. The author concludes that the MTFS successfully reduced inflation, that the long-run demand for money function is stable (thereby validating a monetarist policy prescription), that narrow money (MO) ought to receive more weight in official policymaking (eg with respect to the setting of interest rates), that it is difficult to use exchange rates as subsidiary indicators of the stance of monetary policy, and that the UK should not join the European Monetary System because, contrary to popular belief, it induces divergence of member countries' inflation rates and monetary policies. Equally provocative are the claims made for the wider success of policy, in the shape of an enduring and unprecedented rise in productivity, rapid disinflation and a more enlightened approach being taken on the industrial relations front. In the light of record (and accelerating) levels of unemployment at a time when the cyclical upswing is petering out, of depressed levels of manufacturing output and investment (still substantially lower than when the Government came to power), and of the recent industrial conflicts involving the teaching profession and within the newspaper industry, such a view is unlikely to command universal support.

Even though the book is unlikely to change the reader's prior beliefs about the merits of "Thatcherism", the author performs a valuable service in explaining the rationale underlying recent policy to a wide audience.

Sir Alan Walters

Maximilian J. B. Hall

Dr Hall is lecturer in economics at Loughborough University.

Zones of enterprise

The Financial Structure of Multinational Capitalism
by Pierre Grou
Berg, £19.95 and £7.95
ISBN 0 907582 40 0 and 41 9

The accelerating pace of direct foreign investment by large enterprises has naturally received widespread attention from social scientists and especially economists. They have tried to explain its form, timing, industrial composition, and international distribution, as well as to analyse the increasingly important policy implications.

The main emphasis of the present book is rather different. It seeks to place recent developments in the long-term perspective of the evolution of capitalism and in particular to establish the role played by financial institutions, especially banks. Viewing the late 1960s and 1970s as a period of capitalist crisis after the long postwar boom, the author argues that part of the crisis was the result of one industrial revolution coming to an end and a new one – based on information technology and electronics – just beginning and causing considerable disruption and fundamental re-adjustment. Enterprises wishing to retain their vitality and industrial leadership have had, therefore, to grow rapidly and achieve high rates of productivity increase. These can only be sustained by expanding into "new territories". For the most part the enterprises that have been most successful in this respect have decreased their bank indebtedness and relied to an increasing extent on internally generated funds. As the process unfolds what emerges are dual economics characterized on the one hand by very large multinational enterprises that are making or have already made the major structural adjustments to the new, underlying technological conditions. They are largely untouched by the economic crisis. On the other hand are enterprises that have not risen to the challenges posed by the third industrial revolution and as a result are in decline.

This brief sketch of what I understand to be the author's interpretation of recent developments (the book was originally published in French and the author has not been well served by his translator) is enough to indicate the breadth and scope of the questions raised about the role of multinational enterprises in the modern economy. It is when the author tries to match his theoretical analysis against the data, however, that the limitations of the study emerge. He uses a sample of the world's largest 500 enterprises in 1965 and 1978 ranked by turnover. Given the main emphasis of the book it is important to note that the enterprises are included because of their overall size not because of the importance of their overseas operations. Although many would occur on both lists it would be interesting to know which companies would not.

Underlying much of the author's subsequent empirical analysis is his contention that the period was one "of accelerated capital concentration" which means "fewer and fewer, but increasingly larger companies ensuring production of goods within a given economic area". Whether the global concentration of production did increase over this period is an interesting and important question but no reliable answer is given in this book.

The author relies on a ratio consisting of the sum of corporate turnovers in the sample per country, to the country's GDP for that year. But since much of their turnover was generated abroad because of their multinational character, the index clearly cannot be related to the concentration of production in "a given economic area". Concentration may have risen, declined or remained unchanged. Certainly the evidence for the US and the UK suggests that little increase in concentration took place in this period in the manufacturing sector.

Again, when considering the indebtedness ratio of the largest enterprises (ie their dependency on outside funds from banks) the author gives five examples of how this declined between 1973 and 1978 and concludes "if we continue with more examples . . . the same results are obtained". Given that the data for calculating this ratio were available for all companies in the sample the conclusion and inferences drawn from it would have been more convincing had a full statistical analysis been presented.

Thus although the study raises a number of important issues concerning the finance and strategy of large multinational enterprises, empirically it does very little to improve our knowledge.

Michael Utton

Dr Utton is reader in economics at the University of Reading.

BOOKS

ECONOMICS

After Keynes

The Crisis of Keynesian Economics: a Marxist view
by Geoffrey Pilling
Croom Helm, £17.95
ISBN 0 7099 4019 X

After Keynes's *General Theory* had been assimilated it came to be widely believed that crises and cycles could now be avoided by suitable demand management. Hence the stagflation and financial stresses of the past fifteen years have caused a crisis of confidence in Keynesian theory and policy. Dr Pilling sees in this crisis the opportunity to expose the "fundamental philosophical and methodological issues" underlying Keynes's *General Theory*.

In the first chapter Pilling outlines reactions to the *General Theory*: the acceptance by many Marxists of some of Keynes's ideas, attempts by neoclassical economists to co-opt Keynes, the monetarist counter-revolution, post-Keynesian developments and finally suggestions to merge the Keynes-Kalecki framework with neo-Ricardian developments. The second chapter explores the significance of the Keynesian revolution in shaping views on the role of the state and interpretations of postwar and interwar history. Though Keynesian ideas have shaped people's perceptions of the appropriate or tolerable size of the state, in Pilling's view Marxist theory would predict a rise in the importance of state spending at this stage of capitalism in any case. (An important reason is the need for state support given the large amounts of finance capital required to take advantage of modern technology.) Keynes is not credited with much power to explain the last fifty years or so of historical experience; Marx is a better guide. The third chapter justifies Pilling's assessment of Keynesian theory. He rests his case on a critique of its foundations, as he interprets them. The final two chapters look at the "arms economy" and at events in international finance in the light of the contrast between Marx and Keynes.

Keynes, Pilling correctly states, is concerned with the functioning of capitalism rather than its dynamics. By this he means that the foundation of Marx's theory in capital and its conflicting social relations sets the stage for prediction of evolving stages of capitalism, of which the rise of the state as an economic force and the collapse of international financial arrangements are manifestations. Keynes's theory cannot make such predictions because it is based on the superficialities of capitalism, income and price rather than value and capital.

This is a fair point taken to an unfair extreme. Surely it is desirable that some analysts take a long, evolutionary view while others study the functioning of an economy at a particular point in its history? Pilling sees no validity in the latter enterprise and quite misunderstands Keynes's method of short-run analysis. He alleges that Keynes "takes both the productive forces and the relations of production", by which he means the assumptions of fixed capital stock and technique, "to be immutable elements, given once and for all" and that these assumptions are merely arbitrary; he misses both their analytical function and their correspondence to an economy which had been accumulating and changing technique only slowly. Clearly these assumptions are not valid for all circumstances – particularly the innovative and rapidly-growing 1960s – but would Keynes have thought they were?

Pilling's view of Keynes's interest theory is similarly misguided. Keynes is criticized for divorcing interest from production and profit. But it was precisely this divorce which Keynes found an alarming new development of capitalism. Capital itself is also alleged to be "divorced from production" in that it is seen as having a yield rather than as being productive. Inconsistently, Pilling interprets the tendency of the marginal efficiency of capital to fall as equivalent to falling marginal productivity, which it is not.

Despite these flaws and misconceptions this book is to be recommended. It is lively and well-written and full of provocative and interesting insights and questions.

Victoria Chick

Dr Chick is reader in political economy at University College London.

The best laid plans

Planning the British Economy
by Paul Hare
Macmillan, £25.00 and £8.95
ISBN 0 333 36110 5 and 36111 3

"When I went to the Bar as a very young man
(Said I to myself, said I)"
I'll work on a new and original plan
(Said I to myself, said I)"
sang the Lord Chancellor in *Iolanthe*. For "the Bar" read "Downing Street" and the timelines of a new study of the rationale of economic planning is clear.

Paul Hare's book is one of a series with the overall title *Radical Economics*, whose general editor writes: "Each book will be a useful contribution to its particular field and should become a text around which the study of economics takes place". This leaves it rather unclear whether *Planning the British Economy* is to be used as a textbook or as a stimulus to debate – or both. Dr Hare clearly regards it as a polemic and it deserves to be read in that way.

The book begins with a survey of planning experience in the UK and briefer accounts of experience in Eastern Europe, France and Japan. A chapter on "theoretical approaches" follows and the second half attempts to outline the political and organizational problems to be overcome were a future Government to adopt a "planning" approach to the economic problems of the UK. As with a sandwich, it is the filling – in this case the theoretical chapter – which really counts. Does Dr Hare make out a convincing *analytic* case for the introduction of planning of any form in a mixed economy? If not, then neither past experience nor organizational problems are of much interest.

The argument presented here is, to say the least, very tentative. Indicative planning is justified not, as in the French case (and indeed in our own ill-fated National Plan), in terms of iteration towards consistency of firms' and industries' supply and demand plans given projections for the macroeconomy, but rather in terms of a highly abstract approach to each firm's investment decisions. Hare concludes that "While a system of indicative planning would seek to mitigate certain areas of uncertainty, it cannot realistically hope to eliminate it." This is even vaguer than the National Plan: "The projections in the Plan are essentially attempts by Government and industry . . . working in cooperation, to break down the global objective of a 25 per cent growth rate into the implications for particular industries . . ." Hare's "argument" thus amounts to no more than an extremely vague pious hope for *some* good to result from the dissemination of (loosely-defined) "information".

The second part of this "theoretical" chapter four addresses the problem of low and badly-allocated real investment in Britain. Hare asserts, astonishingly, that capital formation is too low because of "too low" savings or because savings are "pre-empted" (his word) by funding the public sector borrowing requirement or by going overseas. But surely every A level student rightly sees that a rise in the savings ratio does not increase investment but merely depresses demand? (Compare UK experience in the 1970s.) Hare argues for an increase in the share of profits in total income but the case for this surely rests on the expected profitability of capital projects, not on the availability of funds? Again, the author's conclusions are jejune: planning "could help" (how?) with large risky projects, newly developing branches of production, the identification of small and medium projects to meet demand currently met from imports and with market opportunities "not currently perceived and acted upon by the private sector in Britain". Really? "The tasks of the proposed planning agency would involve efforts to . . . promotion of . . . identification of . . ." and so on. Again, vague and pious hopes; no analysis, let alone "theory". If this is the kind of intellectual background to the formation of Labour's economic policy, one can only despair.

What the reader makes of the rest of the book will be determined by what he or she makes of this supposed analytic basis for "planning" in a mixed economy. The early chapters are useful but woefully under-referenced brief summaries of planning experience so far. There is an inadvertently ironic remark – given current domestic attitudes to the Civil Service – that "the bureaucracy has long been held in high esteem in Japanese society; as a result, it generally attracts the best graduates". More generally, Hare has to concede that neither French nor Japanese planning has had a demonstrable role to play in the relative success of their economies: ". . . one has to admit that [planning's] direct impact on French economic development must have been quite modest." And; "It is important not to exaggerate the role of MITI [Ministry of International Trade and Industry] in Japan's economic success". In another context Hare's intellectual honesty again takes him on to thin ice so far as Labour's economic orthodoxy is concerned: "one of the findings of the Wilson Committe was that the availability of funding was rarely the effective constraint on investment." So much for the perfidy of insurance and pension funds and the destructive effect of overseas investment by UK financial institutions.

The implicit message of this book (I am really not sure whether its author would agree) is that prior to *any* discussion of the optimal pattern, or even level, of investment must come the problem of how to reach and maintain sufficiently high levels of demand, output and employment. That is a matter for macroeconomic policy. If and when that is sorted out, "planning" just might have a role to play in trying to raise the underlying rate of potential growth of the economy. But to pretend that "planning" can help with the former problem is foolish. If Paul Hare's book helps, no matter how unconsciously, to teach the left that crucial lesson it will not have been in vain.

M. J. C. Surrey

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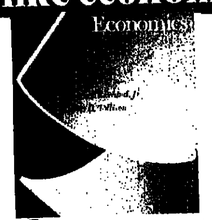

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Hoover models

From New Era to New Deal: Herbert Hoover, the economists and American economic policy 1921–1933
by William J. Barber
Cambridge University Press, £25.00
ISBN 0 521 30526 8

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Herbert Hoover

Although there may still be some who regard Herbert Hoover as a "do nothing" President, he was, in fact, quite the reverse. Indeed this energetic, hard-working chief executive was denounced by Roosevelt in 1932, for recklessly spending too much of the nation's money in the course of many interventions in the economy.

Hoover, as Secretary of Commerce, was a vigorous supporter of scientific management and pursued a policy of governmental encouragement of cooperative organization for business. He had also become convinced that the worst effects of serious recessions, like that of 1920–21, could be mitigated by the adoption of government sponsored public works, by low interest rates and by the maintenance of wage rates. The Hoover economic model, as Barber demonstrates, did not meet with universal approval from either Republican colleagues or professional economists. Nevertheless America had a President who seemed as well equipped as any before him to deal with an economic crisis.

Barber, in a sympathetic study, portrays Hoover as the victim of adverse circumstances. Initially, he implemented his economic strategy even though it was attacked by Treasury Secretary Mellon, and increasingly by economists who were convinced that wage cuts, which Hoover opposed, were a vital prerequisite for recovery. As economic circumstances worsened, the President exhorted industry to have more confidence in the future, expanded public works and even reduced taxes in 1929. The results, unfortunately, were disappointing and by 1931 it was clear that a new approach was necessary. From this point in the depression Hoover attached the highest priority to saving the crumbling banking system which was in a sorry plight because its unitary structure was unable to withstand the inept policies pursued by the Federal Reserve; policies over which, incidentally, the President had no control.

To regain public confidence for the banking sector Hoover stressed financial orthodoxy: public works were now no longer a solution for unemployment and attempts were made to balance the budget. To combat speculation against the dollar a deflationary tax increase was introduced. Hoover's most imaginative intervention in the economy was to establish the Reconstruction Finance Corporation, but this body, even with its powers extended, could not prevent the paralysis of the banking system in early 1933. Throughout the worsening crisis professional economists were in disarray. As Barber writes, supporters of laissez-faire claimed that governmental intervention hindered recovery; others argued that the intervention by the federal government was not vigorous enough.

Barber's view is that Hoover understood that the aggregate volume of spending in the economy needed to be increased; his problem was that he was not able to ensure that programmes designed to do this were fully implemented, or pushed to their logical conclusion. The author is right, however, to emphasize how much the New Deal owed to Hoover's depression policies though the President would not have been comfortable with this identification. On the other hand one can criticize Hoover for his lack of imagination over the war debts issue, for his failure to appreciate the advantages to the economy from generous relief payments and for his refusal to veto the Hawley-Smoot tariff bill, in spite of special pleadings from over 1,000 economists.

This carefully researched volume is valuable for the insight which it gives into Hoover's changing economic strategy. It also presents, with great clarity, the varied opinions of professional economists. Perhaps the reader could have been told more about the policy implications of fluctuations in the economy; on recession periods of recovery seemed to imply that the worst was over. Finally, was Hoover quite unmoved by political considerations in his economic policy?

Peter Fearon

Peter Fearon is senior lecturer in the department of economic and social history in the University of Leicester.

Trade barriers

Protection and Industrial Policy in Europe
by Joan Pearce and John Sutton with Roy Batchelor
Routledge & Kegan Paul, in association with RIIA, £16.00
ISBN 0 7102 0733 6
Free Trade or Protection? A pragmatic analysis
by H. Peter Gray
Macmillan, £25.00
ISBN 0 333 36201 2

Over the last troubled decade, international trade has experienced a significant resurgence of protection in the rich countries, in the shape of "voluntary" export restraints and other instruments of the "new protectionism".

Does this reflect only the myopic, misguided, or possibly corrupt, behaviour of politicians – making concessions to particular producer groups at the expense of the general interest – or is there today a genuine economic rationale for increased protection? In an uncertain world, does the economic self-interest of the rich countries dictate the intensification of discriminatory trade blocs like the European Community (EC) and its associates? These key issues are addressed in the two books reviewed here; their authors share the view that some temporary trade barriers may indeed be justified, but disagree substantially over how far such action is merited.

Joan Pearce and John Sutton in their study *Protection and Industrial Policy in Europe* reach the conclusion that greater protection of industry in the EC is generally neither desirable nor feasible. Following a review of international trade rules and the chief measures of industrial protection in the EC, the authors provide a revealing insight into the disparate views of the principal member states on trade and industrial policy. While the French argue that the creation of an integrated EC internal market would need to be accompanied by tougher trade restrictions externally ("Euro-protectionism"), the Germans, and to a lesser extent the British, favour a more liberal approach. With such divergent national attitudes, agreement on a more protectionist EC policy is thus regarded as unlikely.

Pearce and Sutton next examine with the aid of case studies the following potential gains from (Euro)protection: the reduction of adjustment costs in a declining industry (clothing and textiles), the fuller exploitation of economies of scale (the car industry), and the stronger development of new, R&D-intensive industries. It is accepted that a qualified case for temporary protection may sometimes exist but that once introduced there is a danger that such measures will become semi-permanent through producer pressure. Often, protection would not tackle the fundamental industrial problems (for example, too many car producers) and despite some success stories in the advanced technology industries such as Airbus there is no general prescription for governments to "pick winners". Nor does this book offer much comfort to Europe's unemployed millions: from a macroeconomic perspective, ignoring retaliation, an attempt to raise employment through tariff protection could work temporarily but would probably soon be undermined as profits and wages in the sheltered sectors increased.

Pearce and Sutton provide a powerful mainstream counter to Euro-protectionist views, based on recent industrial experience. Their review of national attitudes to protection in the EC, and survey of the policy implications of recent developments in the theory of trade under imperfect competition are notable contributions. However, with a 20-page synopsis plus chapter and final summaries this book is unduly repetitive, and more space could usefully have been devoted, for example, to the adjustment experience of declining industries where temporary protection has been tried.

In *Free Trade or Protection?*, H. Peter Gray sets out to reconsider the possibility that, in a turbulent world, protective measures might have a useful role to play for rich countries. The logic of the classical free trade argument is not questioned, only the reality of its standard assumptions, notably factor homogeneity and full employment. By modifying these, Gray makes the case for short-term protection to help a potentially-viable industry cope with a temporary problem such as an overvalued exchange rate. Protection through subsidies (or more likely, tariffs and quotas) would be conditional on pay cuts for workers and management, zero dividends and full reinvestment of profits.

Following Canterbery, Gray sees the labour market as highly compartmentalized, with worker mobility limited by aptitudes, skills and experience. When demand for labour changes rapidly, as the result of an upsurge in imports from the newly industrializing countries and/or the development of new labour-saving technology ("chips and robots"), unemployment results which can, as at present, assume massive proportions. Depending on the source of the problem, protection against developing countries' exports could provide the industrialized countries with badly needed time for adjustment. Gray suggests that, in return for developing countries accepting restrictions on their exports, rich countries should recompense third world exporters for their trade losses within the grandiose framework of a global compensation fund which also channels government aid to developing countries and operates a compensatory finance scheme for primary products.

There are some problems with Gray's policy blueprints. First, in practice politicians have proved unwilling to terminate "temporary" protection – Gray, however, believes that politicians would become more courageous if economists could furnish them with a more satisfactory economic rationale for short-term protection. Second, the major factor behind the growth in unemployment in declining industries like clothing and textiles is generally technological change in the rich countries rather than escalating third world competition. Further, Gray's suggestion that Europe, with its weak advanced technology industries, should form a free trade bloc with Japan and the United States is politically unrealistic. None the less, this is a challenging book which deserves a wide audience especially if, as Gray anticipates, the problems of permanent mass unemployment in the context of rapid technological change and third world industrialization prove "the dominant challenge facing western democracies in the rest of this century".

R. C. Hine

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Taylor & Francis, £25.00
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A remarkable political feature of the world since 1945 has been the proliferation of sovereign states, exclusively in the third world; the new creations are now about as numerous as the old. This development was not generally foreseen. Luigi Einaudi expressed the expectation, as well as the hope, of many students of international affairs when he wrote in 1940 that the only sure outcome of the war was the disappearance of the anachronistic sovereign state. Ironically, the United Nations, once seen as the means of superseding national sovereignty, was to become instead an instrument in creating and consolidating the many new sovereignties.

To Burnell writes as a political scientist about the economic expression of third world sovereignties. Most of the governments concerned have strengthened the economic significance of political boundaries by measures discriminating against foreign suppliers of products and factors, by setting up autonomous monetary systems, and by nationalizing or requiring the indigenization of ownership of economic assets.

Such policies are also familiar, of course, in governments elsewhere, and whether they are appropriately to be described as economic nationalism is a question of degree. Governments weigh national interests in "self-reliance" or "economic independence" (or, frequently, sectional interests masquerading as national interests) against individual welfare. The less regard is given individual interests – or the more emphatic is the "national equation" swallowing personal titles in a wider value – the more economically nationalist are the policies. Dr Burnell makes no use of the contrast between collective and individual values, which is a pity, since it was the basis of Friederich List's original critique of Adam Smith, and since the growth of collectivist ideology in the 20th century has much explanatory power in his subject.

His book provides a discursive treatment of that subject, on which he is evidently very well informed. A firmer analytical framework would have helped, and some quantification of the facts over which he ranges might have been thought due. But the gravest weakness of this book is the prolix, unpolished and opaque style in which it is written. The following specimen comes from the final paragraph: "But if Nkrumah of Ghana was correct when he said in 1965 that neo-colonialism is the last stage of imperialism, and if imperialism is the highest stage of capitalism (Lenin), then there can be little doubt in the minds of some that, although bourgeois pseudo-nationalism in the South is pernicious towards the masses there, a genuine self-reliant nationalism would have profound consequences for countries in the North."

The essential purpose of Dr Deger's monograph is to use an econometric model to measure the causal relationship running from military expenditure to economic growth on the basis of statistical data for 50 developing countries in the years 1965–73. She finds this relationship to be strongly negative, when allowance is made for all the measurable indirect effects for which the model provides. It is good to have the views of the man in the street on the economic effects of militarization so expertly confirmed.

This book is aimed at a wide readership, but Dr Deger has taken few pains to make her work generally accessible. Not many people will recognize "a fixed input-output structure as a clay-clay vintage capital model". Some will even be puzzled by the term "milex" when it is brought into use eight pages before it is explained. Even economists may feel uneasy about concepts like "investment per unit of capital" and "baroque over-specialization". Carelessness extends to the tables, several of which contain undefined categories, misidentified quantities, or numbers which are plainly wrong.

The analysis rests, not altogether necessarily, on a highly stereotyped image of developing countries, all of which, it seems, experience slow economic growth and deteriorating terms of trade, require their investments to be centrally planned, are badly in need of government intervention in agriculture, and tend to waste resources through consumption. Their growth is conceded to depend on the demand for, as well as the supply of, savings, but that demand is held to be constituted by public spending on education and health with the same facility as technical progress is equated with expenditures on research and development. In these countries, "the nation" or "society", or policy-makers acting on behalf of these entities, determine, or at any rate need to determine, the optimum rate of saving, the allocation of savings among sectoral investments, and the choice of productive techniques. These notions are as unrealistic as the suggestion, considered by Dr Deger, that militarism encourages the work ethic.

One of Dr Deger's topics, arms production in the newly industrializing countries, is authoritatively surveyed in the latest publication of the Stockholm International Peace Research Institute. *Arms Production in the Third World* gives an overview of this subject, statistics covering a 35-year period from 1950, and detailed reports on the major third world arms producers, some of which are also exporters – above all, Israel and India, but also notably Brazil, Taiwan, South Africa, Argentina, the two Koreas and the countries of the Association of South East Asian Nations.

Over 50 developing countries now engage in some form of arms production and 26 make major weapons (aircraft, ships, armoured vehicles, missiles). Given a sufficient industrial base, production occurs as another assertion of "self-reliance" (with as little success, it may be noted, as other kinds of import-substituting industrialization), and has sometimes been strongly encouraged by embargoes on imports. Governments threatened by external enemies are naturally prominent as buyers of arms, whether domestically produced or imported. It is regrettable that we live in such a world, but the desire of sovereign bodies to possess the means of defending themselves cannot reasonably be thought more reprehensible in the third world than in the first or second.

Douglas Rimmer

Douglas Rimmer is director of the Centre of West African Studies at the University of Birmingham.

ISRAELI WEAPONRY/PICTURE BY JUDAH PASSOW

Shopping for status

Choosing the Right Pond: human behaviour and the quest for status
by Robert H. Frank
Oxford University Press, £23.00
ISBN 0 19 503520 8

Most of us have heard at least one version of the story about the famous academic rejected for the post he had long coveted with the words: "Sorry but we think you are too big a fish for our little pond". Whatever opinion the appointing committee was trying to signal, their decision may have done him a favour. Being the largest fish in your own pond can sometimes be better than being a new fish in someone else's pond.

Relative position in the hierarchy, status and seniority can be valued more highly than absolute levels of income or wealth. Indeed success in terms of moving up a rung in the ladder, particularly if it means jumping over a close colleague – if only for a larger office, a main site parking permit, or a title on the door – appears to satisfy a deep human need. Just how much we are prepared to sacrifice to these ends, and to what extent relative position and income are complements or substitutes in the social struggle, is a matter for debate. In this stimulating book Robert Frank has used the hypothesis that most of us will pay a lot for higher status to explain a wide range of economic phenomena. Although it contains the usual tables and diagrams, entertainment is provided by more than 40 cartoons, and there is no algebra and not one equation. The author must be a founder member of the society to put the fun back in economics.

Early on he argues that there is an implicit market for status operating alongside a competitive market for labour. Concern about status will then explain why the wage structure is flatter than economic theory would suggest. Those who contribute most to the output of the firm receive rather less because they value the opportunity of being at the top of the ladder, and those who contribute least receive rather more in compensation for being at the bottom. Competition ensures both that workers can always move to another firm if its alternatives of wage and status prove more attractive, and that the average wage in each firm behaves as theory predicts. Although evidence is introduced to support this conclusion, some readers will question whether all labour markets are so competitive, and workers so mobile, while others will wonder whether a wage structure which mirrors relative productivities with an egalitarian bias is the crucial stylized fact to be explained.

Yet the same theme is applicable to income re-distribution. Agreement on taxation is supposedly reached in a social contract which enables the rich to pay for keeping enough of the lower orders in the same community to make it viable. As an explanation for the persistence of notionally progressive tax systems it is more persuasive than a later attempt to equate the right to the full fruits of one's own labour with the right to part of the fruits of someone else's labour.

The search for positional advantage can also be mutually destructive. Examples are given of trade-offs between income and safety or leisure or noise. Making or saving more money than each other now means taking more risks, working longer hours, and living in noisier neighbourhoods than each would choose independently. So the original hypothesis can be set in the prisoner's dilemma game to explain why rules which limit socially harmful behaviour come to be accepted. Familiar problems are given a new perspective. There is much else to argue about in this book – though the later chapters have less to do with status – and it deserves to be widely read.

John Bonner

John Bonner is senior lecturer in economics at the University of Leicester.

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Republic of Transkei

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Applications should be sent to the Vice-Dean of the Faculty, 55 Deri Road, Penylan, Cardiff, CF 2 5AH South Wales, United Kingdom.

University of Transkei

"UNIVERSITY OF LONDON GOLDSMITHS' COLLEGE

Registrar

Applications are invited for this post. The vacancy arises as a consequence of the retirement of Mr. S.D. Leedam. The College hopes to make the appointment by 1st October, 1986 or thereafter on a date to be agreed.

The Registrar is the senior administrative officer of the College responsible to the Warden for the administration of the College.

Salary £25,065 per annum (under review) plus £1,038 London Allowance.

Write for further details of the appointment to the Senior Assistant Registrar (Personnel), University of London Goldsmiths' College, New Cross, London SE14 6NW.

Applications should be returned not later than 7th June, 1986 to the Warden, University of London Goldsmiths' College.

The College is an Equal Opportunities Employer." (71432)

UNIVERSITY OF KENT AT CANTERBURY

FACULTY OF HUMANITIES

Temporary Lecturer in Drama and Theatre Studies

Applications are invited for a Temporary Lectureship in Drama and Theatre Studies for one year from 1 October 1986. The successful candidate will be expected to have graduate qualifications in an appropriate area of Drama Studies and practical/professional experience in some of the following: TE, Community Theatre, Devising, Directing, Playwriting, Stage Technology, Stage Design, Performance Skills and Theatre Administration.

Salary will be according to qualifications and experience on the scale £8,020 – £15,700 per annum but the appointment will not be made above the seventh point on the scale.

Further particulars and application forms are available from Mr J E Reilly, Secretary of Faculties and Deputy Registrar, The Registry, University of Kent at Canterbury, Kent, CT2 7NZ. Completed application forms (three copies) should be returned not later than Monday 9th June 1986. Please quote reference number A33/86/THES. (71429)

AUSTRALIA

Applications are invited for the following posts for which applications close on the dates shown. SALARIES (unless otherwise stated) are as follows:- Postdoctoral Fellow $A25,472–$A28,888; Senior Research Fellow $A30,049–$A45,376; Senior Lecturer $A36,841–$A42,888; Lecturer/Research Fellow $A27,233–$A35,777; Senior Tutor $A25,473–$A26,889. Further details and application procedure may be obtained from The Association of Commonwealth Universities, (Appts), 36 Gordon Square, London WC1H 0PF unless applications are invited direct to the University. Equality of employment opportunity is University policy.

University of Tasmania
CONTRACT LECTURER IN COMPUTER SCIENCE
Ref: 86/14
Applications are invited for the above post which is available from September 1986 to December 1988. Candidates should have a higher degree in computer science or engineering and a demonstrable ability in research. Duties will include undergraduate teaching and the supervision of research students. The Department has research interests in computer architecture, development, programming languages, functional programming and databases; interests in any of these areas will be an advantage.
30 June 1986.

La Trobe University Melbourne
LECTURER/SENIOR LECTURER IN ECONOMICS
Ref: A0041/910
School of Economics
The Department of Economics wishes to make an appointment to commence as soon as possible. The successful applicant would be expected to have the ability to make a contribution in the core courses offered in macroeconomics and microeconomics. Opportunities would exist for involvement in the numerous optional courses offered by the School. Applications are particularly invited from persons with strong research interests in development and resource economics who would be able to assist with the supervision of postgraduate students engaged on theses in these areas. There is a possibility that the successful applicant might join a long-term, team research project in the Philippines.
20 June 1986

University of Queensland Brisbane
LECTURER/SENIOR LECTURER (tenurable) – PSYCHOLOGY
Ref: J0186
Responsibilities will include lecturing and research in any area of Organizational Psychology. Also expected to help coordinate and develop the coursework master's program in Organizational Psychology (an option in the Master of Applied Psychology). Because honours and postgraduate thesis in this area are numerous, demonstrated competence in supervision of student research is essential. Consulting and the development of contacts with business and public service organizations also expected.
10 July 1986

STATISTICAL ADVISER-SOCIAL SCIENCES GROUP
(Limited Term Appointment)
Ref: 1968/86
Must have broad knowledge of research methodology in the Social Sciences to advise on the design and analysis of research projects. Experience using a wide range of statistical packages expected including experience with general linear models. Interest in programming an advantage.
Appointment three years in first instance, possibility of a further term. Salary per annum: $A36,341–$42,588.
30 June 1986.

Australian National University
POSTDOCTORAL FELLOW/RESEARCH FELLOW/SENIOR RESEARCH FELLOW – AUTOMATED REASONING PROJECT
Ref: S516.4.1
Research School of Social Sciences
The Automated Reasoning Project is an interdisciplinary project involving the areas of artificial intelligence, computer science and logic. It is concerned with automating certain clearly defined deductive reasoning processes in a variety of scientific domains. In doing so, it is expected that the Project will substantially extend and expand the research previously done in the Logic Group, Department of Philosophy, RSSS, into automated theorem proving for a wide variety of logics. Special emphasis will be placed on investigating applications of the research, for instance in automated deduction in number theory. It is also expected that in the course of carrying out this research a variety of computer packages will be developed for use in logical research. The project expects to have a network of 9 SUN-3 computer workstations and it is expected that each academic member of the Project will have their own such workstation. Further research support of varying kinds will also be available.
Applicants should be logicians or suitably qualified computer scientists, mathematicians or philosophers.
It is expected that the appointment will be taken up on or after 1 October 1986.
13 June 1986

SENIOR LECTURER/ LECTURER/SENIOR TUTOR IN ACCOUNTING, FINANCE OR INFORMATION SYSTEMS
Ref: 86.23.A.L
Department of Commerce
Faculty of Economics and Commerce
Two positions are available. Applicants should have interests in one or more of the areas taught by the Department of Commerce which include financial and management accounting, finance and accounting theory, corporate finance and investments, auditing, business statistics, public sector accounting and accounting information systems.
Candidates for a lecturing position should have, or be completing, high level academic qualifications in accounting or related disciplines, a strong analytic background, a good teaching record together with a good research record and/or appropriate commercial experience. Candidates for a senior tutorship should have completed an honours degree or equivalent and preferably have relevant teaching experience.
23 June 1986

CONDITIONS OF APPOINTMENT
Appointment, unless otherwise stated, is on the Senior Research Fellow/Research Fellow normally up to three years, with the possibility of extension to a maximum of five years. Lecturer/Senior Lecturer will be for four years in the first instance with the possibility, after review, of appointment to an existing age; Tutor/Senior Tutor will be for up to two years initially with the possibility of extension to a maximum of five years.
Grants are provided towards travel and removal. Assistance towards housing is given to an appointee from outside Canberra. Eligible appointees will be required to join the Superannuation Scheme for Australian Universities. Maternity leave is available. The University reserves the right not to make an appointment or to make an appointment by invitation at any time. Applicants should quote the advertisement reference when requesting further particulars. (71431)

Coláiste na hOllscoile Gaillimh
UNIVERSITY COLLEGE GALWAY
IRELAND

TEMPORARY TEACHING APPOINTMENT IN EDUCATION

Applications are invited for a Temporary Teaching Appointment in Education for the Academic Session 1986-87. Applications will be particularly welcome from persons with a special interest in the Philosophy of Education.

Salary: £1,100 per month.
Closing date for receipt of applications 30 May, 1986.
Further information may be obtained from the Registrar, University College, Galway, Ireland. (72800)

UWIST
University of Wales

WELSH SCHOOL OF ARCHITECTURE PROFESSOR (Head of Department)

Salary: Professorial Range above £20,204 (under review)

Requests (quoting Ref. D59) for details to Staffing Office, UWIST, PO Box 68, Cardiff CF1 3XA.

Closing Date: 12 June 1986 (72802)

UWIST
University of Wales

MECHANICAL AND MANUFACTURING SYSTEMS ENGINEERING PROFESSOR
(Part-time Fixed Term)
Advanced Manufacturing Technology.

Salary: £16,000 including superannuation (related to professorial range – under review).

Applications by letter with C.V. and names of 3 referees quoting ref: D67 should be sent to the Staffing Office, UWIST, PO Box 68, Cardiff CF1 3XA by 28 May 1986.

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Salary within the range Administration Grade II — £12,280-£15,700 p.a.

Application form and further particulars available from: Personnel Officer (non-academic), Aston University, Aston Triangle

Birmingham B4 7ET (telephone: 021-359 3611 ext. 4568) quoting reference 86/34/THES. Closing date: 6th June, 1986.

ASTON UNIVERSITY

UNIVERSITY OF BRADFORD

The Librarian

Applications are invited for the post of University Librarian which becomes vacant from 1 September, 1986, following the retirement of Mr. F.Ayres. Salary will be within the professorial range.

Further particulars can be obtained from the Registrar and Secretary, University of Bradford, West Yorkshire, BD7 1DP. An equal opportunity employer.

Closing date for receipt of applications is 13 June, 1986.

The Papua New Guinea University of Technology

Applications are invited for the positions in the following Departments:

Matheson Library
(Audiovisual Officer)

The University wishes to appoint an Audiovisual Officer who will be responsible to the University Librarian for the management and development of the Library's Audiovisual Unit. This Unit provides photographic and other audiovisual production and presentation services to the University's academic departments and functions as a media resource centre. It has a staff of seven. The post will be vacant from October, 1986. Applicants should hold a degree or postgraduate qualification in the audiovisual field and should have supervisory experience in audiovisual production. Previous experience in higher education in a developing country is desirable. Ability and desire to train Papua New Guinean staff is essential. Further particulars of the post and the Audiovisual Unit are available from the University Librarian at the address below.

Department of Mechanical Engineering
(Technical Instructor/Senior Technical Instructor).

The successful candidate, preferably with a trades background, should have a higher technical certificate/diploma/degree in mechanical engineering (or equivalent) and extensive industrial experience. Experience in teaching would be an advantage. Duties: teaching at undergraduate level in workshop practice and technology in engineering; engineering drawing; and appointee should be able liaise with industry. Experience in CAM technology would be an advantage but not essential.

Lecturer

The successful candidate would have an honours degree in mechanical/production engineering from a recognised university with industrial/teaching experience. Postgraduate qualification is desirable. Experience in working in a developing country would be an advantage. Duties: teaching at undergraduate level in one or more of the following subjects: manufacturing engineering and technology, design for production and production related subjects. Experience and knowledge in CAD/CAM would be an advantage.

The Department offers a programme leading to B. Eng. degree and higher degrees by research. Applications are invited for the above positions from suitably qualified candidates. Two of these positions are available immediately and the third will become available in January 1987.

Salary: Audiovisual Officer: K30,165 per annum, Lecturer K18,315 – K20,165 per annum, Technical Instructor/Senior Technical Instructor: K14,070 – K20,165 per annum (K1 = Stg. 0.6856 approx.) Level of appointment depends upon qualifications and experience.

Initial contract period is for three years, other benefits include a gratuity of 24% taxed at 2%, return fare for married staff, appointment and repatriation fares and leave fares for the staff member and family after 18 months of service, settling-in and sorting-out allowances (to would have one year, education fares and assistance towards school fees. Free housing, salary protection plan and medical benefit schemes are available.

Detailed applications (two copies) with curriculum vitae, together with the names addresses of three referees and indication of earliest availability to take up appointment, should be sent to the registrar, Papua New Guinea University of Technology, Private Mail Bag, Lae, Papua new Guinea, by 27 June 1986. Applicants resident in the United Kingdom should also send an additional copy to Association of Commonwealth universities (Appts), 36 Gordon Square, London WC1H 0PF, from whom further general information may be obtained. (71448)

Massey University
Palmerston North
New Zealand

SENIOR LECTURER IN THE REHABILITATION OF THE VISUALLY IMPAIRED AND BLIND

Applications are invited for a new position in the Department of Psychology. The appointment will be a contract for three to five years in the first instance, but may continue beyond the initial funding period. The appointee will be responsible to the Head of the Department of Psychology for working within the Department's programmes in rehabilitation and for providing leadership in the development of effective rehabilitation training and programming in this area.

An essential component of the training to be offered is Orientation and Mobility Training to instructors of the blind and visually impaired. In addition, the appointee will be required to offer courses covering one or more of the following: communications problems, theoretical and practical aspects of rehabilitation of the blind and visually impaired. Some teaching will be carried out extramurally (by correspondence) and experience in this area would be an advantage.

Applicants should possess as a minimum qualification a good honours degree, experience in rehabilitation, and in working with persons who are blind or visually handicapped. Possession of a higher degree and/or specialist qualifications would be an advantage.

Salary: within the scale NZ$37,000 - 47,000.

Conditions of Appointment may be obtained from the Secretary General, Association of Commonwealth Universities (Appts), 36 Gordon Square, London WC1H 0PF. Applications close on 31 July 1986. (70734) H1

University of Otago
Dunedin, New Zealand

LECTURER OR SENIOR LECTURER IN MARKETING

Applications are invited for the position of Lecturer or Senior Lecturer in the Department of Marketing. The position involves teaching at undergraduate and postgraduate levels and would be of special interest to a candidate wishing to develop course work in one or more of the following areas: Marketing Management, International Marketing, Consumer Behaviour, Marketing Logistics, Industrial Marketing, Small Business Marketing, Marketing of Services, or Food Marketing. There are opportunities for research work (including Ph.D. study), case study writing, executive development and consulting work. The Department currently has ten members of staff and a substantial number of postgraduate students.

Salary:
NZ$35,000 - $35,000 per annum. Senior Lecturer NZ$37,000 - $47,000 per annum.

Intending applicants should write for further information, available from the Secretary General, Association of Commonwealth Universities (Appts.), 36 Gordon Square, London WC1H 0PF, or from the Registrar of the University, P.O. Box 56, Dunedin, New Zealand. Specific information about the Department may be obtained from Professor G. Mueller-Dieckmann, Chairman of the Department of Marketing.

Applications close on 15 July 1986. (70738) H1

University of Waikato
Hamilton, New Zealand

APPOINTMENT IN MUSIC
(Vacancy 86/5)

Applications are invited for a position as Lecturer or Senior Lecturer in Music. It is a new and single appointment to the School of Humanities. There is no Department of Music in the University but the appointee will be responsible to teach and develop appropriate courses in music history and appreciation which will complement courses offered by the Hamilton Teachers' College, with whom the University maintains close collegial relations.

Applicants should hold an appropriate university degree and have an interest in a wide range of music.

It is expected that the appointment would be taken up mid November 1986.

The current salary range for Lecturers is NZ$26,000 - $5,000 and Senior Lecturers NZ$37,000 - 47,000 per annum.

Enquiries of an academic nature may be made to the Dean of the School of Humanities, Professor G.M. Walker.

Information on the conditions of appointment and details of the method of application are available from: The Registrar, University of Waikato, Private Bag, Hamilton, New Zealand, or from the Secretary General, Association of Commonwealth Universities (Appts), 36 Gordon Square, London WC1H 0PF.

Applications close on 9 June 1986.

Equality of Employment Opportunity is a University policy. (70735) H1

University of Newcastle upon Tyne
Department of Mechanical Engineering

LECTURER

Applications are invited for a post of Lecturer in Mechanical Engineering. Candidates should have interests and experience in automatic control, with particular reference to robots and their application in manufacturing. The Lecturer will be expected to take part in undergraduate and postgraduate teaching in the relevant fields, and to contribute to research, including cooperative work with industry.

Candidates should have a good Honours degree in Mechanical Engineering or a related field, together with research and/or industrial experience.

Salary will be at an appropriate point on the Lecturer scale: £8,020 - £15,700 per annum according to qualifications and experience.

Further particulars may be obtained from the Senior Assistant Registrar (Establishments), (P.F.), The University, 6 Kensington Terrace, Newcastle upon Tyne NE1 7RU, with whom applications (8 copies) together with the names and addresses of three referees should be lodged not later than 23rd May, 1986. (50698) H1

UNIVERSITY OF OXFORD DEPARTMENT OF EDUCATIONAL STUDIES

RESEARCH OFFICER (Modern Languages)

A research officer (Research Scale 1A, £8,020–£12,780) is required to work in the Department of Educational Studies on a four-year project, directed by Dr David Phillips, on Diversification of First Foreign Language Teaching. The project, funded by the Leverhulme Trust, will commence in January 1987.

The project will involve detailed study of the attitude and attainment of pupils in a number of schools where languages other than French are offered as first foreign languages in parallel with French. The person appointed will have successful teaching experience and some knowledge of research techniques and will be qualified in French, German and, preferably, Spanish. He or she will be responsible for the day-to-day running of the project and will work under the direction of Dr Phillips and the project steering committee.

Further details of the research proposal will be sent to short-listed applicants prior to interview.

Letters of application, with the names of two referees, should be sent to the Administrator, University of Oxford, Department of Educational Studies, 15 Norham Gardens, Oxford OX2 6PY to arrive by 30th May 1986. (71437)

The University of Bophuthatswana, Mafikeng invites applications from suitably qualified persons for the following posts:

PROFESSIONAL STUDIES : Professor
Department is designed to develop knowledge and skills in students to become competent teachers.

PHYSICS : Senior Lecturer

DATA PROCESSING : Senior Lecturer

ECONOMICS : Senior Lecturer

AGRICULTURAL ECONOMICS : Professor/Senior Lecturer

AGRICULTURAL EXTENSION : Senior Lecturer

The successful applicants will have postgraduate qualifications and relevant experience.

In addition to a competitive salary, the University offers a number of attractive benefits. Further details are available on request from South African Universities Office, Chichester House, 278 High Holborn, London WC1V 7HE. Closing date for applications 15th June 1986. (71454)

University of Bophuthatswana

NIHE
NATIONAL INSTITUTE FOR HIGHER EDUCATION DUBLIN

The School of Business Administration invites applications for:

Senior Lectureship in Marketing

The School of Business Administration, within the Faculty of Business and Professional Studies, has teaching and research interests in Business Management and Organisation, Economics, Industrial Relations and Personnel Management, Marketing and Public Administration. The School has a central role in the teaching in the Business Studies and Languages and International Marketing and Accounting and Finance degrees. It has a subsidiary role in many other degree programmes. The School also supervises graduate students for postgraduate degrees.

A vacancy exists at Senior Lecturer level in the Marketing area. Applicants seeking a definite term or visiting appointment will be considered.

Candidates should be well qualified academically, have academic, research or business experience and should hold a Ph.D. degree or equivalent. Applicants should have an active interest in and commitment to research.

Salary Scales IR£16,659 - 22,005

Application forms and further details are available from the Personnel Officer, National Institute for Higher Education, Glasnevin, Dublin 9. Closing date: 6 June 1986.

UNIVERSITY OF BOTSWANA

Applications are invited for the following posts:

LECTURERS – PRE-ENTRY SCIENCE COURSE

The Pre-entry Science course upgrades and prepares school leavers for degree studies in the Faculty of Science. Subjects taught are English/Study Skills, Biology, Chemistry, Mathematics and Physics. The Pre-Entry Science Department has an establishment of 5–3 lecturers per subject and is expanding; a total of 270 students are expected to enrol in the next course which commences in January 1987.

Lecturer – English/Study Skills: The English/Study Skills component aims to develop the communicative study skills that students need to follow university studies in science. It includes: basic lexical, grammatical and functional characteristics of English used for scientific communication; attitudes, purposes and methods in studying; library information and reference skills, introduction to reading strategies, listening and notemaking and scientific writing. There is also some careers guidance. Lecturers are encouraged to develop their own course material and expected to involve themselves in a Departmental programme of science educational research. The appointee will be expected to assist in the training of local staff development fellows and liaise with other sections to ensure integration and continuity in the Science co-ordinated course. Requirements are: BA with English Language as major and MA in Applied Linguistics; TEFL/TESL certificate would be an advantage.

Lecturer – Physics: Candidates should have an MSc (or equivalent) and preferably a diploma/certificate in education plus three years' teaching at appropriate level. The main duty is to teach Physics at 'O' level and any students who are being prepared for University studies in a science-based field; in addition, the lecturer would be expected to contribute to other activities in the Department.

LECTURER IN STATISTICS

Applicants should have at least a good Master's degree in Statistics: research/training experience at university level is desirable. The appointee should be able to teach statistics to degree/diploma students in Statistics and to other students in the Faculty of Social Science.

Salary: P16,452–20,664 p.a. Fringe benefits for expatriates: will be entitled to contract addition at 30% of basic salary, and gratuity at 25% of basic salary plus contract addition on successful completion of a two-year contract.

Applications with names and addresses of three academic referees should be addressed to the Assistant Registrar (Academic Staffing), University of Botswana, Private Bag 0022, Gaborone, Botswana; candidates in the UK should also send a copy of their applications to the Secretary General, Association of Commonwealth Universities (Appts), 36 Gordon Square, London WC1H 0PF. Closing date: 10th June 1986. (71441)

Universities continued

UNIVERSITY OF AUCKLAND
New Zealand

Applications are invited for positions in the following Departments:

LECTURESHIP IN THEORETICAL AND APPLIED MECHANICS (School of Engineering)

Applicants should be suitably qualified with academic and/or professional experience. The Department is concerned with the mathematical modelling and computational solution of engineering problems, one particular field of activity aspects of Continuum Mechanics and related applied mathematical techniques to engineering and science based students.

Closing: 30 June 1986.

Department of Economics
SENIOR LECTURESHIP/ASSOCIATE-PROFESSORSHIP

Applicants should have advanced qualifications and a strong research record, and be able to provide leadership within the Department for research and teaching. Research into New Zealand issues will be required. Teaching and research experience may be in any of the major fields of Economics.

LECTURESHIPS/SENIOR LECTURESHIPS (TWO POSITIONS)

Applicants should have either completed a PhD degree or have equivalent research and teaching experience in any of the major fields of economics. Preference in one appointment may be given to an applicant with qualifications in Industrial Economics.

Closing: 25 June 1986.

Department of Accountancy
LECTURESHIP/SENIOR LECTURESHIP IN ACCOUNTING
LECTURESHIPS/SENIOR LECTURESHIPS (2) IN FINANCE

Applicants should have a higher degree in either accounting or in finance together with either a successful record of teaching and research or with appropriate professional experience, and be able to contribute vigorously to the teaching and research programmes of the Department. In respect of the Accounting vacancy, the Department is seeking to make an appointment in management accounting and/or accounting information systems.

Closing: 30 June 1986.

Commencing salaries will be established within the appropriate scale: Lecturer NZ$26,000 – $35,000, Senior Lecturer NZ$37,000 – $47,000. Associate Professor NZ$53,000 – $59,000. Conditions of Appointment and Method of Application are available from the Secretary General, Association of Commonwealth Universities (Appts), or the Assistant Registrar (Academic Appointments), University of Auckland, Private Bag, Auckland, New Zealand. Applications, in accordance with the Method of Application, should be forwarded as soon as possible but not later than the closing dates specified. (71444)

OPEN UNIVERSITY

PART-TIME TUTORIAL AND COUNSELLING STAFF

Applications are invited for part-time tutorial and counselling staff for the 1987 academic year. Appointments will be made in the latter part of 1986 prior to the next academic year which starts in February.

In 1987 the University will be offering more than 130 undergraduate courses in 5 Faculties, Arts, Mathematics, Science, Social Science, Technology and the School of Education. The Centre for Continuing Education will be increasing the range of short professional updating courses it has to offer.

Existing members of the University's part-time tutorial and counselling staff will be sent application forms during May as a matter of course. The number of appointments of new staff will, therefore, be restricted and will vary between courses and regions. However, some vacancies will exist in all regions of the country. Applicants should be graduates or graduate equivalent. Recent teaching experience in further, adult or higher education is highly desirable.

To obtain application forms and further particulars send a POSTCARD to the Tutors Office (TH), The Open University, P.O. Box 473, Walton Hall, Milton Keynes, MK7 6AU.

To ensure that your application is considered for the 1987 academic year forms should be submitted to one of the University's Regional Centres by Friday 13 June 1986.

The Open University
FACULTY OF MATHEMATICS

SENIOR LECTURESHIP IN COMPUTING
LECTURESHIP IN COMPUTING

Applications are invited for a permanent post of Senior Lecturer in Computing and a permanent post of Lecturer in Computing. Both posts are available immediately.

Post 4991 Senior Lectureship in Computing

This post is one of a number made possible by a major grant from the Science and Engineering Council. Candidates should have an industrial or academic software engineering background with a research record in formal methods. We are particularly keen to attract someone who can demonstrate expertise in the area of concurrent processing.

The successful candidate will initially lead a small team producing an industrial training pack on formal methods in software development and will lead research in his or her particular area of software engineering.

Post 4992 Lectureship in Computing

Applicants for this post should have an industrial or academic background in software development. In particular, we would welcome applications from those who have experience or interests in software engineering. The duties associated with the post include the academic editing and production of written and television materials for the course Fundamentals of Computing. This is rewritten version of an existing course which currently attracts over 2,500 students and will be a major component of the Computer Science programme in the Faculty of Mathematics.

Candidate for the Lectureship should not be more than 35 years old and should not already hold a permanent appointment in a UK University.

The Open University is a world leader in distance education and these posts offer the successful candidates the opportunity to develop the teaching, writing and educational technology skills which are currently a major demand in this country and throughout the world.

Appointment to the Lectureship will be made at an appropriate point (according to age and experience) on the Lecturer salary scale (£8,020–£15,700). Appointment to the Senior Lectureship will be made at an appropriate point (according to age and experience) on the Senior Lecturer salary scale (£14,870–£18,625).

Further particulars for both posts and application forms are available from the Senior Assistant Secretary (Maths), (CLC/2), Faculty of Mathematics, The Open University, Walton Hall, Milton Keynes MK7 6AA. (Telephone: 0908 653784; there is a 24-hour answering service on 0908 653368.

Closing date for applications: 3rd June 1986. (71442)

Silsoe College
A Faculty of the Cranfield Institute of Technology

SENIOR LECTURER IN MARKETING
(Department of Marketing and Management)

Applications are invited for a newly created post in the Faculty of Agricultural Marketing, Food Production and Rural Land Use. Applicants should have a good honours degree and/or postgraduate qualification. A wide range of background and experience will be considered, but preference will be given to those keen to specialise in agriculture and food marketing either in Europe or developing countries, or both. The person appointed will be expected to provide leadership, particularly with respect to sponsored research commissions, professional development and short course programmes.

Salary is on the University Senior Lecturer Scale £11,478 to £18,585 per annum.

Application forms and further particulars may be obtained from the Head of Administration, Silsoe College, Silsoe, Bedford MK45 4DT. Tel: Silsoe (0525) 60428.

Informal enquiries may be made to Roy Hill, Professor of Product Management and Head of the Department of Marketing and Management.

Closing date for receipt of applications is Friday, 13 June 1986. (90742) H1

University of Exeter
Department of Sociology

TEMPORARY LECTURER IN SOCIOLOGY

Applications are invited for the post of Temporary Lecturer in Sociology. The post is for a fixed term of one year, tenable from 1 September or 1 October 1986. Candidates should be able to contribute to teaching in political sociology, sociological theory and social stratification.

Salary will be within the range £8,020 - £9,495 p.a. (under review) with placement dependent on age and experience.

Further particulars available from the Personnel Office, University of Exeter, Exeter EX4 4QJ, to whom applications (6 copies, candidates living overseas 1 copy) giving the names of 3 referees, should be sent by 3 June 1986, quoting reference no. 3446 (90717) H1

University of Bath
School of Management

LECTURER IN MANAGEMENT (BUSINESS ECONOMICS)

This is a New Blood appointment within the Business Economics and Operations Management group. Candidates should have an interest in research into the financial aspects of export performance and foreign operations of UK firms including location of industrial investment.

(Ref: 86/80).

LECTURER IN MANAGEMENT (MARKETING)

Fixed-term appointment for 3 years

The ideal candidate will have an interest in marketing research and will have the skills to teach quantitative methods.

(Ref: 86/81).

Salary: £8,020 - £15,700 per annum.

Further particulars and application forms may be obtained from the Personnel Officer, University of Bath, Claverton Down, Bath BA2 7AY quoting reference number.

Closing date: 5th June 1986. (90710) H1

University of Oxford

WILDE LECTURESHIP IN NATURAL AND COMPARATIVE RELIGION

Applications are invited for this Lectureship, which will be tenable from 1 October 1987 for one, two or three years as the electors shall determine. The lecturer is required to deliver not less than eight lectures in each Academic year of tenure. The emoluments of the post are about £1,800 a year.

Further particulars may be obtained from the Secretary to the Wilde Lectureship Electors, University Offices, Wellington Square, Oxford OX1 2JD, to whom applications, naming three referees but without testimonials, should be submitted by 30 June 1986. (90704) H1

University of Leeds
School of English

LECTURER

Applications are invited for the above post available for a fixed-term of one year from 1 October 1986. A good honours degree and research experience are required in teaching and research interests in nineteenth century literature. An interest in feminism might prove helpful.

Salary on the academic scale for Lecturers £8,020 - £15,700 according to age, qualifications and experience.

Informal enquiries may be made to Professor Sacvan Bercovitch (Tel: 0532 431751, Ext. 5558).

Application forms and further particulars may be obtained from the Registrar, The University, Leeds LS2 9JT, quoting reference number 617 closing date for receipt of applications 6 June 1986. (90708) H1

University of Exeter

TEMPORARY LECTURER IN GEOGRAPHY

Applications are invited for the above post from suitably qualified persons working in historical geography. The post is tenable for one year in the first instance from either 1 September or 1 October 1986.

Salary will be within the range £8,020 - £9,495 p.a. (under review) with placement according to age and experience.

Further particulars available from the Personnel Office, University of Exeter, Exeter EX4 4QJ, to whom applications (6 copies, candidates living overseas 1 copy) giving the names and addresses of three referees, should be sent by 30 May 1986, quoting reference no. 3447. (90701) H1

University of Auckland
New Zealand

Applications are invited for the following positions:

LECTURESHIP IN GEOCHEMISTRY (3 YEAR TERM)

Applicants should have advanced qualifications and experience in teaching and research in geochemistry and preferably have experience with the geochemistry of geothermal fluids. The successful applicant will be required to supervise laboratories and conduct research within the Department of Geology, and is expected to take up the appointment towards the end of 1986.

Closing date 15 July 1986

LECTURESHIP IN INORGANIC CHEMISTRY

Applicants should have a Ph.D. or equivalent qualification. While the Department of Chemistry has strengths in transition metal chemistry we have needs in other areas of inorganic chemistry, applicants with an interest and experience in any area of inorganic chemistry will be considered.

Closing date: 11 July 1986

LECTURESHIP IN ITALIAN

Applicants should be fluent in Italian (preferably native speakers), with major interests and experience in language teaching. Research interests in applied linguistics or a related field would be preferred. The successful applicant will be responsible for language teaching at all levels from beginners to Master's and will work with a Senior Tutor teaching wholly in language and a Lecturer and two Senior Lecturers whose teaching and research fields include: language, medieval literature, renaissance and contemporary literature, linguistics, theatre, film and contemporary cultural studies.

Closing date: 4 July 1986

Commencing salary will be established within the range NZ$28,000 to $35,000 per annum.

Conditions of Appointment and Method of Application are available from the Assistant Registrar (Academic Appointments), University of Auckland, Private Bag, Auckland, New Zealand, or the Secretary General, Association of Commonwealth Universities (Appts.), 36 Gordon Square, London WC1H 0PF. Applications, in accordance with the Method of Application, should be forwarded as soon as possible but not later than the closing date specified. (90691) H1

University of Stirling
Department of Management Science

TEACHING ASSISTANT IN MANAGEMENT SCIENCE/ TECHNOLOGICAL MANAGEMENT

Applications are invited for this fixed term post to 31 December 1987 which participate in the teaching of the Language Centre, and to participate with the teaching of post G-level courses to Science and Arts students.

Applicants should have a good first degree, native speaker competence (degree or equivalent) competence in French, and language-teaching experience at intermediate and advanced levels.

The salary will be within the range £8,020 to £10,575 per annum.

Send self-addressed, stamped envelope (9" x 4") for further particulars and application form to Brian Clear, Personnel Office, Sussex House, The University of Sussex, Falmer, Brighton BN1 9RH. The closing date for receipt of applications is 2 June 1986. Applicants are requested to ask two referees to send references directly without waiting to be asked. Applicants may discuss the post further with the Director of the Language Centre. (90725) H1

Heriot-Watt University
Department of Economics

TEMPORARY LECTURER IN ECONOMICS

Applications are invited for a temporary lectureship in the Economics Department, tenable from October 1st 1986 for one year. The person appointed will be expected to undertake a range of introductory and intermediate level teaching in economic analysis and may also have the opportunity to contribute to more advanced teaching.

This salary is likely to be within the first five points of the lecturer scale £8,020 - £15,700 per annum.

Commencing salaries will be, in the range £8,020 - £15,700 per annum.

Requests for application forms and further particulars quoting reference No 2/86 should be sent to the Registrar, UMIST, P.O. Box 88, Manchester M60 1QD, to whom closing date is 7 July 1986. (90711) H1

University of Stirling
Institute of Occupational Health

RESEARCH STATISTICIAN

Applications are invited for the position of Research Fellow (or Research Associate). This is a new and very attractive opportunities for a research statistician, combining work in an established research centre with the development of statistical applications in health and related areas. Some programming support is available. The post is tenable for 3 years in the first instance, renewable on a 3 year rolling contract basis, and is available from October 1986 or from a date to be arranged. Applicants should have a postgraduate degree in statistics, preferably with some research or practical experience.

Appointment will be on the Research Fellow A1A scale, £8,020 - £13,780 or the Research Associate 1B scale, £7,025 - £9,495, depending on qualifications and experience, plus superannuation.

For further particulars Tel: 0324-673 1361, Ext. 6559, quoting reference C1. No formal application form. Three copies of application, including full Curriculum Vitae and naming three referees to Assistant Registrar, (Science), The Top Flat, 265, Birmingham, B15 2TT by May 30, 1986.

An Equal Opportunities Employer. (90746) H1

University of Stirling

FINANCE OFFICER

The University is seeking a qualified accountant with relevant experience as Finance Officer. Salary will be within the scale £15,481–£21,058.

Further particulars are available from the Secretary (T), University of Stirling, Stirling FK9 4LA. Tel. 0786 73171 Ext 2350 to whom applications including the names of three referees should be sent not later than 15 June 1986. H

University of Auckland
New Zealand

Applications are invited for the following positions:

LECTURESHIP IN GEOCHEMISTRY (3 YEAR TERM)

Applicants should have advanced qualifications and experience in teaching and research in geochemistry and preferably have experience with the geochemistry of geothermal fluids. The successful applicant will be required to supervise laboratories and conduct research within the Department of Geology, and is expected to take up the appointment towards the end of 1986.

Closing date 15 July 1986

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Applicants should have a Ph.D. or equivalent qualification. While the Department of Chemistry has strengths in transition metal chemistry we have needs in other areas of inorganic chemistry, applicants with an interest and experience in any area of inorganic chemistry will be considered.

Closing date: 11 July 1986

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Applicants should be fluent in Italian (preferably native speakers), with major interests and experience in language teaching. Research interests in applied linguistics or a related field would be preferred. The successful applicant will be responsible for language teaching at all levels from beginners to Master's and will work with a Senior Tutor teaching wholly in language and a Lecturer and two Senior Lecturers whose teaching and research fields include: language, medieval literature, renaissance and contemporary literature, linguistics, theatre, film and contemporary cultural studies.

Closing date: 4 July 1986

Commencing salary will be established within the range NZ$28,000 to $35,000 per annum.

Conditions of Appointment and Method of Application are available from the Assistant Registrar (Academic Appointments), University of Auckland, Private Bag, Auckland, New Zealand, or the Secretary General, Association of Commonwealth Universities (Appts.), 36 Gordon Square, London WC1H 0PF. Applications, in accordance with the Method of Application, should be forwarded as soon as possible but not later than the closing date specified. (90691) H1

University of Stirling
Department of Management Science

TEACHING ASSISTANT IN MANAGEMENT SCIENCE/ TECHNOLOGICAL MANAGEMENT

Applications are invited for this fixed term post to 31 December 1987 which participate in the teaching of the Language Centre, and to participate with the teaching of post G-level courses to Science and Arts students.

Applicants should have a good first degree, native speaker competence (degree or equivalent) competence in French, and language-teaching experience at intermediate and advanced levels.

The salary will be within the range £8,020 to £10,575 per annum.

Send self-addressed, stamped envelope (9" x 4") for further particulars and application form to Brian Clear, Personnel Office, Sussex House, The University of Sussex, Falmer, Brighton BN1 9RH. The closing date for receipt of applications is 2 June 1986. Applicants are requested to ask two referees to send references directly without waiting to be asked. Applicants may discuss the post further with the Director of the Language Centre. (90725) H1

UMIST

TWO LECTURESHIPS IN CHEMISTRY

Applications are invited for the posts of Lecturer in Inorganic Chemistry and Lecturer in Organic Chemistry, tenable from October 1986. Candidates from Commonwealth countries may be exempted from the requirement to be resident in the UK. Applications including the names of three referees should be sent to the Registrar, UMIST, P.O. Box 88, Manchester M60 1QD, by 30 June 1986. Quote Reference 30/86. (90695) H1

Universities continued

University of Canterbury
New Zealand

CHAIR OF MUSIC

The Council of the University invites applications for the above-mentioned position.

The successful candidate will be of proven distinction in one or more of the following areas: composition, musicology, music education. The appointee will be expected to offer academic leadership of a high order in his/her field of specialization, to teach undergraduate and graduate students and to contribute to the general musical and academic activities of the School of Music.

The appointee will take up the position on a date to be arranged.

At present the salary for a Professor is within the range of NZ$62,000 to NZ$77,500 per annum. The commencing or subsequent salary may be increased as a result of the review of salaries which the University undertakes at the beginning of each year.

Further particulars and Conditions of Appointment may be obtained from: The Association of Commonwealth Universities (Appts), 36 Gordon Square, London WC1H 0PF.

Applications close with the Registrar, University of Canterbury, Private Bag, Christchurch, New Zealand, on 30 June 1986. (90736) H1

University College London
Department of Psychology

Applications are invited for

TWO LECTURESHIPS

one being a 3-year probationary appointment; the other a 1-year tenure post. The posts will be filled within the first four points of the salary scale (£8,020 - £9,495) + London Allowance.

The duties of one post include a contribution to the teaching of social psychology. Research interests in social cognition or experimental and applied social psychology would be an advantage.

The second appointment will be made in some aspect of Cognitive Science, and interests in AI or computational approaches to psychology would be an advantage. Consideration will also be given to applicants with interests in human learning.

Applications, giving the names of 3 referees, should be addressed to the Senior Assistant Secretary (Turanmail), University College London, Gower Street, London WC1E 6BT, from whom further particulars may be obtained.

The closing date for applications is 30 May 1986. (90689) H1

University of Birmingham
Department of Statistics

Institute of Occupational Health

RESEARCH STATISTICIAN

Applications are invited for the position of Research Fellow (or Research Associate). This is a new and very attractive opportunities for a research statistician, combining work in an established research centre with the development of statistical applications in health and related areas. Some programming support is available. The post is tenable for 3 years in the first instance, renewable on a 3 year rolling contract basis, and is available from October 1986 or from a date to be arranged. Applicants should have a postgraduate degree in statistics, preferably with some research or practical experience.

Appointment will be on the Research Fellow A1A scale, £8,020 - £13,780 or the Research Associate 1B scale, £7,025 - £9,495, depending on qualifications and experience, plus superannuation.

For further particulars Tel: 0324-673 1361, Ext. 6559, quoting reference C1. No formal application form. Three copies of application, including full Curriculum Vitae and naming three referees to Assistant Registrar, (Science), The Top Flat, 265, Birmingham, B15 2TT by May 30, 1986.

An Equal Opportunities Employer. (90746) H1

University of Surrey
Department of Electronic and Electrical Engineering

LECTURER IN TELE-COMMUNICATIONS/ SATELLITE SYSTEMS

Applications are invited for a lectureship in Telecommunications, Satellite/Spacecraft Systems due to the expansion in our research activities in these areas. Preference will be given to those offering experience and with research interests in: Digital communications/communications theory, satellite systems design, spacecraft engineering.

The successful candidate will have the opportunity of joining a large and active research group working on advance payloads and future spacecraft designs.

Salary will be in the range £8,020 - £15,700 per annum according to age, qualifications and experience. Superannuation under USS conditions.

Further particulars are available from the Academic Registrar (AA), University of Surrey, Guildford, Surrey GU2 5XH, or Tel: Guildford (0483) 571281, Ext. 2081. Applications from men and women, in the form of a curriculum vitae, including the names and addresses of three referees, should be sent to the same address by Friday 6th June 1986 quoting the reference 504. (90687) H1

University of Durham
School of English

LECTURESHIP IN APPLIED LINGUISTICS

Applications are invited for a Lecturer in Applied Linguistics (for a period of three years from 1 October 1986) to work principally on the taught course leading to the M.A. in Applied Linguistics (with special reference to the teaching of English as a foreign language) and to assist in the other work of the School as required.

The applicants should have wide interests in the field of applied linguistics, specially in Language Learning Theory. A particular knowledge of some branch of theoretical linguistics and/or relevant T.E.F.L. experience would be an advantage.

The initial salary will be at an appropriate point on the Lecturers' scale (£8,020 - £15,700 p.a.) together with normal pension arrangements.

Applications (three copies), together with the names of three referees, should be submitted not later than Friday, 6 June 1986 to the Registrar and Secretary, Old Shire Hall, Durham DH1 3HP, from whom further particulars may be obtained. (90700) H1

Imperial College of Science and Technology
(University of London)

ECONOMIST IN THE PROGRAMME OF RESEARCH INTO OPTIMAL POLICY EVALUATION (PROPE)

Applicants should have a quantitative background with an interest in macroeconomics, and should be prepared to work as an interdisciplinary team specialising in the development and application of quantitative methods for policy design.

The appointment which is available immediately is until September 1987, with the possibility of renewal.

Salary in the range £8,020 - £15,700 plus £1,987 London Allowance.

CVs and the names of two referees to Dr E. Karakitsos or to Dr B. Rustem. PROPE Group, Department of Electrical Engineering, Imperial College of Science and Technology, London SW7 2BT. Closing date 7 June 1986. (90714) H1

Cambridge University

Department of Pure Mathematics and Mathematical Statistics

Applications are invited for a

TEMPORARY LECTURESHIP OR A TEMPORARY ASSISTANT LECTURESHIP IN PURE MATHEMATICS

for two years from 1 October 1986. The appointment is not renewable.

Applications giving a full C.V. and the names of two referees should be submitted to the Staff Officer, Heriot-Watt University, Chambers Street, Edinburgh EH1 1HX, from whom further particulars may be obtained. (90729) H1

Belfast
The Queen's University of Belfast

LECTURESHIP IN INFORMATION TECHNOLOGY

Department of Electrical and Electronic Engineering

This lectureship is established in 1985 in connection with an Intermediate degree course in Information Technology. The electronics contribution to this course is provided by the Department of Electrical and Electronic Engineering and the person appointed should have expertise in any aspect of electronics related to Information Technology. The lecturer will also have responsibility for other aspects in the Department related to his or her specialisation and should be prepared to contribute to research.

Salary scale: £8,022 - £15,782 per annum with contributory pension rights under USS, initial placing depending on age, qualifications and experience.

Further particulars may be obtained from the Personnel Officer, The Queen's University of Belfast, BT7 1NN, Northern Ireland. Closing date: 30 June 1986. (Please quote Ref: 85/TIES). (90712) H1

University of Birmingham

Department of Physical Education & Sports Science

RESEARCH ASSOCIATE/FELLOW IN HUMAN PHYSIOLOGY

Applications from postgraduates or those with postdoctoral experience in physiology are invited for the above post in the Department of Physical Education and Sports Science tenable for three years.

The person appointed will join a small MRC Research Group directed by Professor C.T.M. Davies, which is concerned with the study of human muscle, physiology and biochemistry, presently located in the Department of Physiology at the University Medical School.

Salary on the scale: £7,055 - 12,780.

Applications (six copies) by 2 June 1986 to the Assistant Registrar (Arts), University of Birmingham, P.O. Box 363, Birmingham B15 2TT, from whom further particulars may be obtained.

An Equal Opportunities Employer. (90705) H1

University of Birmingham

Faculty of Law

TEMPORARY LECTURESHIP IN EUROPEAN COMMUNITY LAW

Applications are invited for a temporary post of Lecturer in European Community Law, tenable for the period 1 October 1986 to 30 September 1987.

Salary will be within the first three points of the Lecturer scale per annum, the range £8,020 to £9,000 a year plus USS.

Further particulars may be obtained from the Assistant Registrar, Faculty of Law, University of Birmingham, PO Box 363, Birmingham B15 2TT. Applications should be sent by not later than 6th June 1986.

An Equal Opportunities Employer. (90693) H1

Heriot-Watt University
Department of Economics

TEMPORARY LECTURER IN SOCIAL AND ECONOMIC HISTORY

Applications are invited for a temporary lectureship in the Economics Department tenable from January 1987 to March 31st 1987. The person appointed will be expected to contribute to first year course in British Economic and Social Policy and a third year course in twentieth century West European History.

The salary is likely to be within the first five points of the lecturer scale £8,020 - £15,700, under review).

Applications giving a full C.V. and the names of two referees should be submitted to the Staff Officer, Heriot-Watt University, Chambers Street, Edinburgh EH1 1HX, from whom further particulars may be obtained, to be returned by 6 June 1986. Quote Reference No 51/86. (90694) H1

King's College London (KQC)
University of London

CHAIR OF INORGANIC CHEMISTRY

The Senate invite applications for the above Chair from candidates with research interests in any area of Inorganic Chemistry.

Applications (10 copies) should be submitted by 20 June 1986 to the Teachers' Section (THES), University of London, Malet Street, London WC1E 7HU, from whom further particulars may be obtained (first be obtained). (90729) H1

University of Hong Kong

STAFF TUTOR IN LAW

Applications are invited for a Staff Tutorship in Law, tenable for one year in the first instance, possibly renewable for one further year, from 1 October 1986 or as soon as possible thereafter.

Salary scale: £8,020 - £9,495. The salary will depend on qualifications and experience.

Further particulars may be obtained from the Assistant Registrar, Faculty of Law, University of Birmingham, PO Box 363, Birmingham B15 2TT, to whom applications should be sent by not later than 6th June 1986.

Starting salary will depend on qualifications and experience.

At current rates, salaries will not exceed 17% of gross income. Housing benefits at a rental of 7½% of salary, children's education allowances, leave, and medical benefits are provided.

Further particulars and application forms may be obtained from the Secretary-General, Association of Commonwealth Universities (Appts.), 36 Gordon Square, London WC1H 0PF, or from the Appointments Unit, Secretary's Office, University of Hong Kong, Hong Kong. Closing 13 June 1986. (90715) H1

Fellowships

University of Southampton

CALOUSTE GULBENKIAN RESEARCH FELLOWSHIP IN PORTUGUESE STUDIES

Applications are invited from postdoctoral candidates or persons of equivalent experience for a Research Fellowship to work on the literature or social history of Portugal in the 19th or 20th centuries. The appointment will be for one year in the first instance, possibly renewable for one further year, from 1 October 1986 or as soon as possible thereafter.

Salary scale: £8,020 - £9,495. The salary will depend on qualifications and experience.

Further particulars may be obtained from the Assistant Registrar (Arts), University of Southampton, Southampton SO9 5NH, to whom applications (3 copies from United Kingdom applicants) should be sent not later than 31 May 1986, quoting reference number 1740/A/TIES. (90699) H2

The University of Leeds

Department of Physics

POSTDOCTORAL RESEARCH FELLOW

Applications are invited for the above post in experimental physicists, chemists or materials scientists with Ph.D. and suitable experience. The project will be concerned with the preparation and properties of thin films of rare-earth transition metallic alloys.

Post available from October 1986 for a fixed term of two years.

Salary on the 1A range for Research Assistants (£8,020 - £12,780) according to age, qualifications and experience.

Informal enquiries may be made to Dr. D. Greig (Tel: (0532) 431751, Ext. 6531).

Application forms and further particulars may be obtained from the Registrar, The University, Leeds LS2 9JT, quoting reference number 5/35. Closing date for applications 6 June 1986. (90708) H2

University of Natal
Durban

Development Studies Unit

Applications are invited from suitably qualified persons regardless of sex, religion, race, colour or national origin for appointment to the post of

RESEARCH FELLOW

The appointment carries an attractive salary package. Details of which are obtainable from the Staffing Section, on request (Tel: 81653308). The salary offered will be determined according to the qualifications and/or experience of the successful applicant.

Application forms, further particulars of the post and information on pensions, medical aid, group insurance, staff bursary, housing and subsidy schemes, long and leave conditions and travelling expenses on first appointment are obtainable from the Secretary, South African Universities Office, Chichester House, 278 High Holborn, London WC1V 7HE or the Registrar, University of Natal, King George V Avenue, Durban, 4001, with whom applications, on the prescribed form, must be lodged not later than 26 June 1986 quoting the reference D48/86. (90721) H

Fellowships continued

The University of Leeds
School of Education

In collaboration with Leeds Metropolitan University

Research Project Examination of Leeds City Council's Primary Needs Programme

POSTDOCTORAL RESEARCH FELLOW/ PROJECT CO-ORDINATOR

Leeds City Council has invited Leeds University to undertake an independent evaluation of the Council's Primary Needs Programme, a major initiative aimed at rebuilding the primary curriculum, improving teaching strategies and developing parental and community links, and involving the allocation of substantial additional human and material resources to the city's primary schools.

Applications are invited for the above post to co-ordinate and implement the evaluation on a day-to-day basis. Applicants should have substantial experience of qualitative and quantitative research projects, ideally in the context of policy-related educational research. Candidates should preferably be experienced in the use of ethnographic, illuminative, or biographical techniques in field research. The appointment will be tenable for a period of two years at a salary scale between £9,495 and £11,875 per annum.

Further details can be obtained from Dr. R.H. Richards, Institute of Aquaculture, University of Stirling, Stirling FK9 4LA. Tel: 0786 73171, Ext. 2054 to whom applications should be sent by 6 June 1986. (90742) H2

University of Aberdeen
Department of Surgery

RESEARCH FELLOW

Applications are invited for the above research position to work on the production of human monoclonal antibodies, specifically to T lymphocytes, especially allergised against neoplastic cells. The post is funded by the Cancer Research Campaign until 30 September, 1987.

Salary within the range £8,020 - £9,495 per annum on the Range 1A Scale for Research and Analogous Staff (under review).

Further particulars and application forms from The Secretary, The University, Regent Walk, Aberdeen AB9 1FX to whom applications (3 copies) should be lodged by 6 June 1986. (Ref: No. JAJ/0021). (90743) H2

University of Stirling
Department of Psychology

POSTDOCTORAL RESEARCH FELLOW

Applications are invited from suitably qualified persons to work on a three year ERRC funded project, supervised by Professor George Butterworth on "The geometry of pre-verbal communication". The aim is to investigate the cognitive developmental processes underlying the comprehension and production of communicative gestures in babies aged between 5 and 18 months. The post will be available from October 1986.

Applicants should have a Ph.D. or comparable experience in psychology.

The salary will be within the range £9,495 - £10,865 (under review).

Informal enquiries may be made to Dr. D. Greig (Tel: (0532) 431751, Ext. 6531).

Application forms and further particulars may be obtained from the Registrar, The University, Leeds LS2 9JT, quoting reference number 5/33. Closing date for applications 6 June 1986. The post will be available from October 1986.

Applicants should have a Ph.D. or comparable experience in psychology.

The salary will be within the range £9,495 - £10,865 (under review).

Informal enquiries may be made to Dr. D. Greig (Tel: (0532) 431751, Ext. 6531).

Application forms and further particulars may be obtained from the Registrar, The University, Leeds LS2 9JT, quoting reference number 5/33. Closing date for applications 6 June 1986. The post will be available from October 1986.

Applicants should have a Ph.D. or equivalent qualification in the field of fish physiology. Candidates should hold a Ph.D. or equivalent and preferably be experienced in the use of radioimmunological, haematological or biochemical techniques in fish. The appointment will be tenable for a period of two years at a salary scale between £9,495 and £11,875 per annum.

Further details can be obtained from Dr. R.H. Richards, Institute of Aquaculture, University of Stirling, Stirling FK9 4LA. Tel: 0786 73171, Ext. 2054 to whom applications should be sent by 6 June 1986. (Ref: No. JAJ/0021). (90743) H2

Cambridge
Gonville and Caius College

TEACHING FELLOWSHIP IN PURE MATHEMATICS

Applications are invited for a Teaching Fellowship in Pure Mathematics (including Probability and Statistics). The successful candidate will be required to teach for up to 10 hours per week in all to Tripos and also to Director of Studies in Pure Mathematics. The appointment will be for three years in the first instance with the possibility of a permanent reappointment to the retiring age. It is hoped that the person appointed can take up the Fellowship on 1 October 1986 or as soon as possible thereafter.

Further particulars may be obtained from the Master, to whom completed applications should be sent by 16 June 1986. H

University of Stirling
Institute of Aquaculture

POSTDOCTORAL RESEARCH FELLOW

Applications are invited for a postdoctoral research position in the field of fish physiology. Candidates should hold a Ph.D. or equivalent and preferably be experienced in the use of radioimmunological, haematological or biochemical techniques in fish. The appointment will be tenable for a period of two years at a salary scale between £9,495 and £11,875 per annum.

Further details can be obtained from Dr. R.H. Richards, Institute of Aquaculture, University of Stirling, Stirling FK9 4LA. Tel: 0786 73171, Ext. 2054 to whom applications should be sent by 6 June 1986. (Ref: No. JAJ/0021). (90743) H2

Cambridge
Gonville and Caius College

TEACHING FELLOWSHIP IN ECONOMICS

Applications are invited for a Fellowship and College Lectureship in Economics. The successful candidate will be required to teach the principles of economics for up to 10 hours per week in Full Term. The appointment will be for three years in the first instance with the possibility of eventual reappointment to the retiring age. It is hoped that the person appointed can take up the Fellowship on 1 October 1986 or as soon as possible thereafter.

Further particulars may be obtained from the Master, to whom completed applications should be sent by 16 June 1986. H

Polytechnics

Faculty of Technology

Department of Electrical and Electronic Engineering and Department of Computing

LECTURERS (SL/L11 LEVEL)

Required for the new BEng (Hons) in Engineering Systems (part of the NAB Engineering and Technology programme) with particular interest in

Microelectronic Engineering
Systems Engineering (Mechanical/Control/Electronics)
Computing Related to Engineering Systems

Appointments are for two years in the first instance (from September 1 1986) with possibility of renewal or transfer into permanent posts. Opportunities for major involvement in ongoing research programmes, as a result of specially restricted teaching loads.

Salary ranges
L1/SL: £8,076 to £15,045
(level of appointment and starting salary dependent upon qualifications and experience) (pay award pending)

Applications forms – to be returned by Friday 30 May 1986 – and further details are available from the Personnel Department. Telephone (0752) 284839. (72699)

Plymouth Polytechnic
Drake Circus, Plymouth
Devon PL4 8AA

Polytechnics continued

Applications are invited for a number of posts within the Department of Electronical and Electronic Engineering.

The Department – a leader in Information Technology and one of the largest engineering departments in the country – currently comprises 45 academic and 30 support staff.

The academic programme includes a large postgraduate course in Information Technology, courses leading to Enhanced (B. Eng.), and Extended (M. Eng.) Degrees, Technician Engineer qualifications and postgraduate studies by research. Departmental research and consultancy interests extend to many branches of Electrical and Engineering, Software Engineering and Knowledge Based Systems.

SECOND HEAD OF DEPARTMENT
(Post-above-Reader)
Salary £19,653 – £21,549 inclusive

This newly established post offers a challenging opportunity for a well qualified engineer with a proven industrial, academic and managerial record. He/she will play a creative role in the shaping of this dynamic department by stimulating the managing academic development and industrial collaboration, participating in the leadership of the Departmental Management Team, and deputising for the Head of Department.

Please quote REF: E27

READER IN INFORMATION TECHNOLOGY
Salary £15,051 – £18,657 Inclusive

The Reader will be expected to initiate and develop a programme of collaborative research and consultancy with one or more established companies in the field. The successful candidate will have a proven personal record in research and consultancy and be capable of leading a multi discipline team of highly qualified staff. Preference will be given to candidates able to identify potential collaborative programmes and the Polytechnic will assist the successful candidate to negotiate a salary supplement with the collaborating company.

Please quote REF: E28

PRINCIPAL LECTURERS
(Three Posts)
Salary £15,051 – £18,657 Inclusive

Candidates should have recent industrial/research/consultancy experience. They will be expected to provide leadership in their field of specialised expertise, in terms of teaching, research, consultancy and course development and initiate projects leading to external funding in support of the varied work of the Department. Subject interests are: a). any branch of Information Technology and applications. b). Computer-Aided Engineering.

Please quote REF: E29

LECTURER II/SENIOR LECTURER
(Permanent and Temporary Posts)

Salary LII £9,114 – £13,983
SL £12,996 – £16,083 Inclusive

Well qualified engineers are required to support the Department in its teaching and research work. The temporary posts arise from the external funding of the Department and will be for a period of one calender year with the possibility of renewal.

Please quote REF: E30

Application forms and further details are available from the Personnel Department, South Bank Polytechnic, Borough Road, London SE1 0AA. Tel: 01-928 3512 (answering service 9.00am to 6.00pm).

Closing date for applications: 30th May 1986

An equal Opportunities Employer (71433)

South Bank Polytechnic
Teaching for tomorrow in the heart of London

The Polytechnic of North London

The Business School

HEAD OF DEPARTMENT

(Grade VI) – 2 posts

The Business School offers a wide range of business, management and professional courses from Higher National Award to postgraduate levels.

The School wishes to appoint two Heads of Department with particular responsibilities for resource management and external affairs.

Head of The Business School (Resources)
Reference L11E.

Responsible for development and management of the School's human, financial and material resources.

Head of The Business School (Resources)
Reference L12E.

Responsible for development of the School's links with the local business community, the promotion of consultancy and short-course work and the generation of external funding.

The School would welcome the secondment of staff from either commercial organisations or other educational institutions for this post.

Salary: £19,653 - £21,549 (inclusive of London Allowance)

Application Form and further details are available from The Personnel Office, The Polytechnic of North London, Holloway Road, London N7 8DB Telephone 609-9013 (24 hour answerphone service)

Closing date for the receipt of applications is Monday 2nd June 1986

THE POLYTECHNIC OF NORTH LONDON IS AN EQUAL OPPORTUNITIES EMPLOYER AND THEREFORE PARTICULARLY WELCOME APPLICATIONS FROM WOMEN, ETHNIC MINORITIES AND THE DISABLED (71429)

香港城市理工學院
City Polytechnic of Hong Kong

Applications are invited for the following appointments:

PRINCIPAL LECTURERS IN THE DEPARTMENT OF ACCOUNTANCY

(A) AUDITING AND INVESTIGATIONS

(B) COMPANY SECRETARYSHIP AND ADMINISTRATION

(C) ADVANCED FINANCIAL ACCOUNTING

Applicants should have a recognized university degree in business/accounting, or an equivalent accounting qualification. For Post (A), preference will be given to candidates with a CPA qualification and a sound knowledge of computing. For Post (B), candidates should also have ICSA membership and preferably a higher degree in business/accounting. A minimum of 13 years' experience including 5 years of high level practical experience in auditing or company secretarial practice/administration is required. For Post (C), preference will be given to candidates with a higher degree in accounting or a CPA qualification; candidates should have a minimum of 13 years' relevant experience including 5 years of high level experience in financial accounting in industry and commerce or public practice. Preference will be given to candidates with research/consultancy and course planning/administration experience.

PRINCIPAL LECTURER/SENIOR LECTURER (CHINESE AND BUSINESS LAW) IN THE DEPARTMENT OF BUSINESS AND MANAGEMENT

Applicants should have a good honours degree or an equivalent professional qualification in the relevant field and preferably a postgraduate qualification. Substantial knowledge of Chinese law is also required. A minimum of 8 and 13 years of relevant professional experience since obtaining the basic entry qualification, which may include years spent on higher degree studies and/or research, is normally required for appointment to the grade of Senior Lecturer and Principal Lecturer, respectively. Preference will be given to candidates with experience in teaching and legal aspects of China trade or research in Chinese law. An ability to read and write Chinese is also desirable.

PRINCIPAL LECTURER IN COMPUTER ENGINEERING OR COMMUNICATION SYSTEM ENGINEERING IN THE DEPARTMENT OF ELECTRONIC ENGINEERING

Applicants should have a higher degree in a relevant subject area and membership of a recognized professional institution. Teaching experience at honours degree level and preferably industrial experience in the areas of computer/digital system design, or the design and implementation of communication systems are required as appropriate. A minimum of 13 years' relevant professional experience is normally expected for appointment to the grade of Principal Lecturer.

Salary Scales (currently under review): Principal Lecturer HK$247,620–HK$307,260 per annum by 5 increments, Senior Lecturer HK$206,920–HK$270,720 per annum by 6 increments (£1 – HK$12.02 on 1.5.86).

Terms and Conditions of Appointment: Appointments will be made initially on two-year gratuity-bearing contract terms with option for a four-year contract for Principal Lecturers. Apart from a 25% terminal gratuity on basic salaries received over the entire contract period, generous fringe benefits are offered, including medical and dental benefits and, where appropriate, leave passages, housing accommodation or housing allowance and education allowance for dependent children.

Application forms and further information are obtainable from the Secretary General, Association of Commonwealth Universities (Appts), 36 Gordon Square, London WC1H 0PF. Completed forms should reach the General Secretary, City Polytechnic of Hong Kong, PO Box 98441, Tsim Sha Tsui Post Office, Kowloon, Hong Kong, by 6th June 1986; an additional copy should be lodged with the Association of Commonwealth Universities. (71443)

DUNDEE COLLEGE OF TECHNOLOGY
Department of Molecular & Life Sciences

SENIOR LECTURESHIP/LECTURESHIP IN BIOLOGICAL SCIENCES
(TWO POSTS)

Applications for the above posts are invited from candidates who have a good first degree and a higher degree in an appropriate discipline.

The principal duties of the post will be in microbiology and physiology, respectively, and an interest in molecular biology/microbial biochemistry or mammalian physiology, together with research and teaching experience in these fields, would be an advantage. Applicants for a senior lectureship should have extensive experience of teaching up to honours level and of course development and administration. Experience of supervising research and an interest in nursing degree courses would also be an advantage.

The persons appointed will be required to teach on a range of postgraduate, degree and other courses and will be expected to undertake research and/or consultancy and contribute to course development and administration. In addition, the senior lecturer appointed will be expected to play a leadership role, to make a major contribution to departmental administration and to supervise research.

Salary scales: Senior Lectureship £13,710–£17,280
Lectureship £9,321–£14,718

with initial placing depending upon approved previous experience. Financial assistance towards the cost of removal expenses may be payable.

Further particulars and application forms may be obtained from the Personnel Officer, Dundee College of Technology, Bell Street, Dundee DD1 1HG with whom applications should be lodged by 30th May 1986. (71486)

Professor/ Head of Library Services

Grade VI Head of Department: £19,653 - £20,549pa inc.

The Head of Library Services leads a team of some 60 staff providing service at the polytechnic's six main locations and various smaller sites. The successful candidate will have extensive management experience in academic libraries and have suitable academic and professional qualifications.

The title of Professor will be awarded to a successful candidate with appropriate research qualifications and experience.

Write enclosing SAE (min. 9in x 4in) and quoting ref. A729B, for further details and an application form: Personnel Office, Middlesex Polytechnic, 114 Chase Side, London N14 5PN. Closing date 28 May.

Middlesex Polytechnic

LIVERPOOL POLYTECHNIC

LIVERPOOL POLYTECHNIC BUSINESS SCHOOL

HEAD OF DEPARTMENT
(2 POSTS) GRADE VI
£18,615 – £20,511

Following the commitment by the Faculty to develop a new Business School, two Heads are sought to complete the management structure. The fine detail of responsibilities will be decided after appointment but all candidates will be expected to have broad experience across the major areas of Research, Courses and External Affairs.

One successful candidate is likely to assume major responsibility for Courses, while the second will be expected to develop External Affairs including Continuing Education. The new Business School incorporates the existing Departments of Accounting and Finance, Business Studies and Management Studies.

For further particulars and an application form contact the Personnel Officer, Liverpool Polytechnic, Rodney House, 70 Mount Pleasant, Liverpool, L3 5UX (Tel 051 207 3581 Ext. 2518/2519) to whom applications must be returned not later than Friday 30th May, 1986.

Liverpool Polytechnic is an Equal Opportunity Employer and welcomes applications irrespective of race, sex, marital status or disability. (71406)

LIVERPOOL POLYTECHNIC

RECTORATE

DEPUTY RECTOR
(ACADEMIC AFFAIRS)
VP XII – £26,052 – £26,994

Applications are invited from suitably qualified and experienced persons for the above post.

An interest in all aspects of academic affairs, in particular in the development of Continuing Education, is essential.

For further particulars and an application form contact the Personnel Officer, Liverpool Polytechnic, Rodney House, 70 Mount Pleasant, Liverpool, L3 5UX (Tel. 051–207 3581 ext. 2518/2519) to whom applications must be returned not later than Friday 6th June, 1986

Liverpool Polytechnic is an Equal Opportunity Employer and welcomes applications irrespective of race, sex, marital status or disability. (71439)

SCOTTISH COLLEGE OF TEXTILES DESIGN DEPARTMENT

LECTURER A

A vacancy exists within the Department for a Subject Leader in Textile Design (Knit) to teach on the BA (Hons) in Industrial Design (Textiles) course. The successful applicant will display qualities of leadership, creative imagination and technical/professional expertise in this area of specialism.

Salary Lecturer A Scale: £9,321 – £14,718 (Bar at £13,710) (under review).

Closing date for completed applications Wednesday 28th May 1986.

Application Forms and further particulars from: I. Mackenzie Gray, Head of Design Dept., Scottish College of Textiles, Galashiels, Selkirkshire TD1 3HF (Telephone 0896-3351) (71502)

Sunderland Polytechnic
Faculty of Humanities
Department of Social Sciences

LECTURER II/ SENIOR LECTURER IN INTERNATIONAL POLITICS

Temporary Appointment for Two Years

LII £8,076 - £11,958 Bar £12,948

SL £11,958 - £14,046 Bar £15,048

Politics graduate for this post, which arises as a result of the secondment of the present holder for two years to the Polytechnic's External Development Unit. You will be expected to teach on a variety of CNAA honours degree courses. The primary area of responsibility will be International Politics and aspects of Western Security, though an ability to contribute to general first year politics teaching, and to interdisciplinary modules would be desirable. Candidates should have appropriate postgraduate and/or research qualifications in the field of International Politics.

An application form and further particulars from the Personnel Officer, Sunderland Polytechnic, Langham Tower, Ryhope Road, Sunderland SR2 7EE. Tel: (0783) 76083, Ext. 211.

Closing date for completed applications 30th May 1986. (70780) HS

North Staffordshire Polytechnic
College Road
Stoke-on-Trent
Faculty of Art & Design

FACULTY ADMINISTRATIVE OFFICER

£7,980 - £9,591 per annum

Applications are invited from appropriately qualified and/or suitably experienced administrators for appointment to the post of Administrative Officer in the Faculty of Art and Design, based at College Road, Stoke-on-Trent.

The duties of the post include close liaison with Senior Academic Staff and Administrators, and the preparation and supervision of the appointed student body's education and personal entitlements to achieve this. Whilst an interest in the discipline of Art and Design would be an asset, proven administrative ability, particularly in an academic environment, will be more important initially.

Application forms and further particulars are obtainable from the Personnel Section, North Staffordshire Polytechnic, College Road, Stoke-on-Trent, ST4 2DE. Tel: (0782) 45231, Ext. 211.

Closing date for receipt of completed applications May day, 2 June 1986. (70751) HS

Polytechnics continued

Department of Psychology
Research Assistant/ Fellows
(3 posts)

Applications are invited for research workers on the following three projects:

"Levels of representation in vision: behavioural testing of some computational models"
This post is for a postdoctoral research fellow, funded by the SERC, to work with Dr Rob Ellis and in collaboration with Dr Alan Allport of Oxford University and Dr Glyn Humphreys of Birkbeck College London.

"A decision support system for research design"
This post is for a postdoctoral research fellow funded by the Polytechnic, to work with Prof Jonathan Evans and Dr Ian Dennis.

"Development of the Palmar Sweat Index (PSI) as a predictive measure in clinical Psychology"
This post is for a postgraduate research assistant, funded by the Polytechnic, to work under the supervison of Dr Graham Turpin.

Each post is tenable for a maximum period of three years. Applicants for research fellow must hold or be about to obtain a Ph.D. degree in a relevant subject, eg cognitive psychology or computing.

Salary scales (under review):
Research Fellow: £8,706 – £9,534
Research Assistant: £8,234 – £7,122

Further details and application forms may be obtained from the Personnel Officer, Plymouth Polytechnic, Drake Circus, Plymouth PL4 8AA, (returnable by Friday 6th June). For informal discussion of any of the posts please telephone the Psychology Department (0752-264647) and ask for the appropriate member of staff. (71426)

Plymouth Polytechnic
Drake Circus, Plymouth
Devon PL4 8AA

TEESSIDE POLYTECHNIC
Department of Electrical, Instrumentation and Control Engineering

LECTURER II/SENIOR LECTURER IN PHYSICS

A vacancy exists for a physicist to join the Physics Group of this Department. The appointment may be made at Senior Lecturer level for applicants with appropriate qualifications and experience.

Lecturer II/Senior Lecturer Salary: £8,076 – £12,945 (efficiency bar) £14,046 (work bar) – £15,045 per annum

The salary on appointment will be no greater than £12,945 (Lecturer II) or £14,046 (Senior Lecturer).

The areas of specific interest are solid-state physics and opto-electronics, directed towards the engineering degrees operated in this Department in Computer Technology, Instrumentation and Control Engineering.

The physics staff engaged in this work, whilst teaching engineering undergraduates are expected to preserve the identity of their physics discipline, thereby complementing the engineering strands on these courses.

Applicants should have a good Honours degree in physics, and preferably some post-graduate research or industrial experience.

Closing date for applications is 30 June 1986.

Application forms and further particulars from Personnel Section, Teesside Polytechnic, Borough Road, Middlesbrough, TS1 3BA; Telephone: (0642) 218121 ext 4114.

An Equal Opportunity Employer (72897)

Awards

University of Newcastle upon Tyne
Department of Applied Mathematics

Applications are invited from British students who expect to obtain, or already possess, first or upper second class degree in an appropriate subject for an

SERC-FUNDED CASE AWARD

on "Advancement of turbine flow calculation methods".

The industrial sponsor is the Turbine Division of NEI Parsons Ltd.

The work will involve development of mathematical models for aspects of the flow through large low pressure steam turbines used in power stations. Computational fluid dynamics will play an important part in the work.

Enquiries to Dr C.A. Jones, Department of Applied Mathematics, School of Mathematics, University of Newcastle upon Tyne NE1 7RU. (90737) H21

Colleges of Further Education

Nene College Northampton

FACULTY OF SCIENCE
School of Leather Technology
National Leathersellers Centre

Principal Lecturer — Head of School

Applications are invited for the post of Head of the School of Leather Technology to replace Peter Ellement who has been appointed Principal of the Cordwainers College, London.

A well qualified and motivated person is sought who has had relevant industrial and/or management and teaching experience.

The Head of the School leads a team of seven lecturers and five technicians and offers a variety of courses from operative to technologist level for students from throughout the English-speaking world.

An exciting and prestigious post with possibilities for research and travel.

Salary: Burnham FE Principal Lecturer grade.

Further details and application form send SAE to The Dean, Faculty of Science, Nene College, Moulton Park, Northampton NN2 7AL. Telephone (0604 715000) (01447)

Colleges of Further Education continued

Strathclyde
Department of Education

Further Education

Applications are invited for the undernoted post. All candidates should have relevant industrial or commercial experience where appropriate.
Teacher training would be an advantage but training can be given on an in-service basis.

HEAD OF DEPARTMENT

BELL COLLEGE OF TECHNOLOGY, Almada Street, Hamilton ML3 0JB.
MATHEMATICS AND COMPUTING. Head of Department, Grade 12. Honours Degree in an appropriate discipline and teacher training, substantial experience at senior lecturer level in further/higher education.

SALARY
Head of Department, Grade 12 £18,660

LECTURER

BELL COLLEGE OF TECHNOLOGY, Almada Street, Hamilton ML3 0JB.
INFORMATION SYSTEMS. Lecturer 'A'. Applicants must possess a relevant degree and have the ability to use business application packages and data base management systems. A post graduate qualification would be advantageous.

SALARY
Lecturer 'A' £9,321–£13,710 (Bar) £14,718

Placing on the salary scale will be given for relevant experience. Forms of application and further particulars can be obtained from the Principal of the college concerned to whom completed applications should be returned not later than 23 May 1986.
EDWARD MILLER Director of Education (71425)

STOKE-ON-TRENT CAULDON COLLEGE OF FURTHER AND HIGHER EDUCATION

Senior Lecturer in Valuation

Salary: £11,958-£14,046 (bar) £15,045

Enthusiastic chartered surveyor required to teach Valuation and associated studies to full-time students on degree-equivalent courses.

Duties will include the development of existing and new courses, counselling of students and some administration.

Application form and further particulars are available from The Vice Principal, Stoke-on-Trent Cauldon College of Further and Higher Education, Stoke Road, Shelton, Stoke-on-Trent ST4 2DG. Tel: Stoke-on-Trent (0782) 29561 Ext. 327 or 306.

Canvassing will disqualify.

Trade Union membership encouraged.

Staffordshire County Council

Oxford St. Aldates College

LAW TEACHER FULL-TIME A-LEVEL & DEGREE WORK

We are Oxford's leading independent College of Further Education and we require, from September 1986, a full-time teacher of Law.

This is an important post in the teaching structure of the College and the person appointed must be able to contribute to both 'A' and Degree level work.

LAW TEACHER PART-TIME

We also require a part-time teacher of Law at all levels.

Write with full C.V. and supporting letter to The Principal, St. Aldates College, Rose Place, St. Aldates, Oxford.

Please state the post applied for. (90696) H7

Business Opportunities

START AN IMPORT/EXPORT Agency. Part or full-time. No capital or risk. Send for free booklet giving details. Universal Trading Co., PO Box 334, London W1A 1DD. (90603) H40

Holidays and Accommodation

DRISCOLL HOUSE HOTEL. 200 single rooms, £65 per week, partial board. Apply 172 New Kent Road, London SE1 4YR. Tel: (01) 703 4175. (52156) H28

Announcements

DR. D.L. TURNER, B.A., F.D.I.M., Principal of Bromsgrove College of Further Education in Nottinghamshire, will take up appointment as Principal of Newcastle College, Durham on 1st September, 1986. (90692) H28

Colleges and Institutes of Higher Education

WEST GLAMORGAN INSTITUTE OF HIGHER EDUCATION

Faculty of Electronics

Applications are invited from suitably qualified persons to join the Faculty of Electronics. The appointees will lecture on a range of Higher National Courses and be involved in the development of a B.Eng degree. The posts are tenable from 1st September, 1986.

Senior Lecturer in Digital Signal Processing

Candidates will be graduates in Electronic Engineering or a related discipline. Experience of the applications of digital signal processors or systolic array processors would be an advantage. An active interest in applying such devices to Image Processing, Data Communications and Measurement Systems would be an asset. A higher degree and research activities in this field are desirable.

Senior Lecturer in Software Engineering

Candidates will possess a degree in Electronic Engineering or Computer Science with an electronic bias. A demonstrable expertise is essential and experience in generating software for dedicated microprocessor applications would be beneficial. A higher degree and research activities in Software Engineering would be advantageous.

Senior Lecturer in Instrumentation and Measurement Systems

Candidates will possess a degree in Electronic Engineering or a related discipline and recent research experience would be welcomed. An active interest in sensor and measurement systems as applied to Automated Manufacturing and Robotic systems would be advantageous. The possession of a higher degree in Engineering or Chartered Engineering status would be desirable.

Senior Lecturer in Communications Engineering

Candidates should be graduates in Electronic Engineering with experience of digital communication links. A knowledge of satellite communications or computer networks would be advantageous. The possession of a higher degree and research experience would be beneficial.

Senior Lecturer in Power Electronics

Candidates should possess a degree in Electrical Engineering or a related discipline. A knowledge of electrical machines and associated drive electronics is essential, as well as experience of computer interfacing and control. An active interest in mechanical systems as applied to Automated Manufacturing systems and Robotics would be an advantage. The possession of a higher degree in Engineering or Chartered Engineer status would be desirable.

Salary Scale
Senior Lecturer £11,958 – £15,045

Further particulars and application forms from the Principal, West Glamorgan Institute of Higher Education, Institute Office, Townhill Campus, Swansea, SA2 0UT. Please enclose a stamped addressed envelope.

Closing Date: Friday 30th May 1986 (71428)

Kent County Council — Education Committee

Mid-Kent College of Higher and Further Education

DEPARTMENT OF BUILDING AND CIVIL ENGINEERING

Senior Lecturer in Civil Engineering

Applications are invited for the above post.

Candidates should possess a degree in Civil Engineering and be a corporate member of the Institution of Civil Engineers and/or Structural Engineers. They should also have had recent experience in design and construction in various aspects of civil engineering.

Salary: £11,958 – £14,046 (Bar) £15,045

Application forms and further particulars are available from the Principal, Mid-Kent College of Higher and Further Education, Horsted, Maidstone Road, Chatham, Kent ME5 9UQ by 27 May 1986. (71453)

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...d Institutes of Higher Education continued

EALING COLLEGE OF HIGHER EDUCATION

LONDON EHE

The College is a major institution of higher education in West London. The major part of the curriculum comprises over 20 CNAA courses including honours degrees in Accounting, Applied Language Studies, Business Studies, Economics, Humanities, Law, Library and Information Studies, and diploma level and BTEC Higher Diploma and diploma. As a consequence of the continued expansion and development of the College, derived in part from the decisions of the National Advisory Body, applications are invited from suitably qualified and experienced persons for the following posts:

LII in Applied Behavioural Science
To teach manpower studies primarily on Accounting courses, we require a postgraduate social scientist with general personal management experience.

LII in Stats/Mathematics:O.R.
For degree and HND levels. Preferably with an interest in applications for the service sector, especially hotelkeeping and catering management and tourism.

LI/II German studies
Preferably with bilingual skills and experience of teaching German in a business context, on BTEC and CNAA courses.

LI/II/SL in Chinese
To teach on PG Diploma course in Modern Chinese (putonghua) and to develop Chinese option on BA Business Studies. Teaching qualification and/or experience essential.

IL/II in Food and Drink Sales & Service
To teach on HCIMA, City & Guilds, BTEC Diploma and Higher Diploma courses. Preferably qualified to HND, HCIMA, degree or equivalent with relevant operational experience.

LI in Spanish (Temporary 1 year)
To teach Spanish language on CNAA degree courses in BA (Hons) Humanities and BA (Hons) Modern European Studies.

LI EFL (Temporary 1 year)
To teach EFL to Cypriot students on a one-year foundation course and to contribute to the range of work of the EFL/SL Division.

LI/II in Law
To teach on business studies courses.

LII in Accounting
To teach on business studies courses.

LII Marketing
Graduate preferably with higher degree and experience to teach at degree and diploma level and develop marketing in the School of Hotelkeeping and Catering.

LI/II in English (Temporary 1 year)
To teach 19th and 20th American literature and American Studies, and also English Literature and Communications.

LII/SL in Accounting and Finance
We requires a well qualified graduate to teach Management Accounting to our CNAA undergraduate courses including Economics Business Studies and in particular BA Accounting Studies.

LI/II in Design Management (Temp. 1 year)
To teach the management, design and production of corporate communications to BTEC HND BUSINESS & FINANCE (Media, Design & Communications Studies) students.

All posts are tenable from 1st September 1986 or as soon as possible thereafter.

Salary (inclusive of London weighting) SL : £12,996 to a possible maximum of £16,083
LII : £9,114 to £13,983
LI : £7,362 to £12,285

Application forms and further details from The Personnel Office, Ealing College of Higher Education, St Mary's Road, Ealing, London W5 5RF.

Closing date: 28th May 1986

WEST GLAMORGAN INSTITUTE OF HIGHER EDUCATION

ACADEMIC VACANCIES

Applications are invited from suitably qualified persons for the following vacancies from 1 September 1986.

Faculty of Education
Senior Lecturer in Primary Mathematics
Candidates should possess a degree and have recent classroom experience in the primary sector. Expertise in educational computing would be an added advantage. The successful applicant will lecture on a range of initial and in-service courses at undergraduate and postgraduate levels.

Senior Lecturer in Primary Education
Candidates should possess a degree in a relevant discipline and will contribute to courses on initial and in-service courses in Primary Education at both BEd and MEd levels. Applicants will also assist in the research programme leading to MPhil/PhD validated by CNAA. Candidates should specialise in one or more of the following; Psychology of Education, School Management, Assessment, and children with special educational needs.

Faculty of Technology
Lecturer II/Senior Lecturer in Craft, Design and Technology
Candidates should possess a relevant degree and have an expertise in at least one of the following areas; Technology (Electronics) Microprocessors/Design and Realisation, Design and Communication. The person appointed should have good school experience and a firm background in the philosophy of CDT. The successful candidate will teach on in-service courses and will lead a small team of lecturers in CDT.

Salary Scales: Lecturer II £8,076 – £12,945
Senior Lecturer £11,958 – £14,046 (Bar) – £15,045

Further particulars and application form from the Principal, West Glamorgan, Institute of Higher Education, Institute Office, Townhill, Swansea SA2 OUT.
Please enclose stamped addressed envelope.

Closing Date: Friday 30th May 1986.

DORSET INSTITUTE OF HIGHER EDUCATION

DEPARTMENT OF COMMUNICATION AND MEDIA

Applications are invited for the following academic positions

READERS IN COMMUNICATION STUDIES (REF: 4415)
Candidates should have an appropriate post-graduate qualification and be able to show substantial evidence of research and production and publication. Preference will be given to candidates who have experience in either computer graphics or audience research measurement and *have already attracted external funding.*

Lecturer II/Senior Lecturer/s in (REF: 4566–4574)

Video Production
Candidates should have experience of production and post-production work in either a broadcast or educational environment. One of the posts will entail taking responsibility for the co-ordination of video production elements *on the BA(Hons) in Communication and Media Production.*

OR COMPUTER GRAPHICS
Candidates should have experience of either computer programming of graphics systems and/or production and post-production work in either the use of paint box or computer animation systems.

OR COMMUNICATION PROCESSES
Candidates should have well developed interests in any area of communication processes an interest in production work such as script-writing would be an additional advantage.

LECTURER II/SENIOR LECTURER (HALF-TIME) IN AUDIO PRODUCTION (REF: 4690)
Candidates should have *experience of production and* post-production work in either a broadcast or educational environment. Preference will be given to candidates with interest in dubbing and in the use of sound in video-production.

VISITING FELLOW AT EITHER LII/SENIOR LECTURER LEVEL (REF: 4726)
This is a *twelve month appointment with teaching in the* general area of communication processes including communication theory, and communication aspects of linguistics, psychology or media sociology. Applications from overseas candidates will be particularly welcome.

Starting Date: 1 September 1986
Salary Scales: Reader £14,013 – £17,619 p.a.
Lecturer II/Senior Lecturer £8,076 – £15,045 p.a.

DEPARTMENT OF BUSINESS MANAGEMENT

READER/PRINCIPAL LECTURER IN BUSINESS MANAGEMENT (Reference 4450)
WITH RESEARCH, TEACHING AND/OR CONSULTANCY INTERESTS IN ONE OF THE FOLLOWING AREAS:
– Marketing
– Business Policy
– Human Resource Management
– Operations Management

Applications are sought from suitably qualified enthusiastic individuals to fill the position of Reader or Principal Lecturer in the Department of Business Management.

Starting date 1 September 1986
Salary Range – Reader/Principal Lecturer £14,013 – £17,619
Closing date 30th May 1986.
For further details and application form please contact:-
Staffing Officer, Dorset Institute of Higher Education, Wallsdown Road, Poole, Dorset BH12 5BB
TEL: 0202 524111 Ext. 5031 (71440)

Essex Institute of Higher Education

School of Applied Social Sciences

POST 1
LECTURER II IN HEALTH SERVICE MANAGEMENT
To teach and develop a wide range of qualifying and post-qualifying management courses within the health sector, including national award bearing programmes, in-service and short courses.

Applicants should have a relevant degree and/or higher level qualification in Management Studies. Recent Health Service experience (preferably in nursing) is essential. Demonstrable commitment to research would be an advantage.

POST 2
LECTURER II IN SOCIAL SCIENCES
(One year temporary appointment)
To teach on a range of qualifying and post-qualifying sociology, psychology or social psychology. Recent experience in one of the caring professions would be an advantage. Applicants seeking a one year secondment from existing employment would be welcome.

Salary LII £8,076 - £12,945 per annum.

Application forms and further details available from Personnel Office, Essex Institute of Higher Education, Victoria Road South, Chelmsford CM1 1LL. Tel: Chelmsford 354491, Ext. 247.

Closing date 30 May 1986. (90735) H8

Personal

LOANS TO SALARIED WOMEN from £50 granted same day. Interest charged 1%pm. Lowndes Lodge Agencies Ltd., 193 Knightsbridge, London SW7 1RB. 01-584 1781. (71028/A/29)

Christ Church College of Higher Education Canterbury

For Autumn Term 1986:
LECTURER AND ADVISER IN PRIMARY RELIGIOUS EDUCATION

This is a joint appointment in association with the Kent Education Committee concerned both with the provision of an advisory service and resource centre for teachers and with the teaching of courses offered by the College. These courses include BA, BEd and BSc degrees, PGCE, advanced diplomas and higher degrees.
Salary scale: Lecturer II/Senior Lecturer £7,548 - £14,061 p.a.
For further details write to the Principal's Secretary, Christ Church College, Canterbury CT1 1QU, enclosing a stamped addressed envelope, to whom applications should be sent not later than 27 May 1986. H1

Miscellaneous

Hull Health Authority
Hull District School of Nursing

Due to major expansion of the School of Nursing, the following posts are still vacant. We require experienced Tutors to consider two Senior Nurse – Education/Managerial vacancies:

SENIOR NURSE-EDUCATION/MANAGERIAL (Grade 4)
to help develop and manage E.N.B. Courses 805 and 811. The post holder must be Registered to either Mental Illness or Mental Handicap and hold a Nurse Teaching Certificate.

Knowledge and interest in nursing for clients in the community would be an advantage.

Informal visits can be arranged.

For further information and application form, please write to: Mrs. J. E. Rayner, Director of Nurse Education, Hull District School of Nursing, West Parade, Ashby Ings, West Parade, Ashby Ings, Scunthorpe, South Humberside DN16 1AA. Tel: Scunthorpe 842131. Closing date: 6 June, 1986. H

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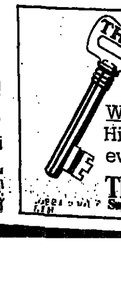

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The Times Higher Education Supplement

Colleges and Institutes of Higher Education continued

CAMBRIDGESHIRE

CAMBRIDGESHIRE COLLEGE OF ARTS AND TECHNOLOGY
East Road, Cambridge CB1 1PT
(equal opportunity employer)

Assistant Principal (Information Technology)

Applications are invited for this new post to be established from 1st January 1987 (or earlier if possible) following recent reports on the organisation and staffing of the computing service and information technology in the College.

The Assistant Principal (IT) will be responsible to the Principal for the establishment and promotion of integrated information technology throughout the College and for co-ordinating the work of academic services.

Applicants will be expected to have had experience at senior level in education, industry or business together with involvement in the integration of IT across a range of activities or disciplines.

Salary, Burnham, Head of Department, Grade 5 (£18,615–£20,511)

Application forms and further details from Principal's Secretary, telephone (0223) 63271, ext. 2036. Closing date for completed applications: 2nd June 1986. (72893)

EQUAL OPPORTUNITY EMPLOYER

The Institute is a major provider of higher education in the North West and, as part of its developing programme of work, seeks applications from well qualified candidates for the following posts:

SL Automobile Engineering
SL Mechanical/Production Engineering (CADCAM)
LII Civil Engineering
LII/SL Civil Engineering (temporary, one-year appointment)
LII Organisation Theory and Behaviour
LII Textile Studies – Yarn Technology
LII Textile Studies – Dyeing and Finishing
LI Art & Design Studies – 3D Design

Posts are available from September 1986. Recent industrial or commercial experience will be an advantage as will a commitment to research and consultancy.

Salary: LI £6,324–£11,247
LII £8,076–£12,945
SL £11,958–£15,045

Application forms and further particulars are available from the Deputy Registrar to whom completed forms should be returned by 30th May 1986 (71432)

BOLTON INSTITUTE OF HIGHER EDUCATION
Deane Road, BOLTON BL3 5AB
Tel: Bolton (0204) 28851

Research

Senior/Junior Researchers

for work in the Statistical Analysis and Modelling of Software Reliability Data

Department of Mathematics, Statistics and Operational Research

The posts, which are to commence as soon as possible, are for work under a 3-year Alvey contract in collaboration with GEC, British Aerospace, the UKAEA, ICL, British Telecom, Logica, and City and Newcastle Universities.

Work at Trent will concentrate on the organisation of data collection within the collaborating organisations, the development and application of appropriate exploratory data analysis techniques, the incorporation of explanatory variables into the analysis (by techniques such as proportional hazards modelling), some work on software testing, and the evaluation of alternative statistical and probabilistic models in software reliability prediction compare to those usually applied.

Three full-time posts with starting salary up to £12,945 per annum are available, together with a senior half-time post offering up to £12,052 per annum. Suitable candidates may have qualifications and experience in statistics, computing or mathematics. Candidates wishing to discuss the vacancies informally may telephone Dr A. Bendell on 0602 418248, extension 21167.

Further details and forms of application are available from the Staff Officer, Trent Polytechnic, Burton Street, Nottingham NG1 4BU. Closing date for applications 2nd June 1986.

Nottinghamshire County Council is An Equal Opportunities Employer. (71439)

Trent Polytechnic Nottingham
Nottinghamshire County Council

EDGE HILL COLLEGE OF HIGHER EDUCATION

LECTURER II IN EDUCATION

Applications are invited from qualified and experienced teachers to teach on courses of teacher education for the Junior age range with special reference to Language across the primary curriculum.

Salary Scale: £8,076–£12,945.

Further particulars and application forms, returnable by 23rd May, are available from the Secretary to the Deputy Director, Edge Hill College of Higher Education, St. Helens Road, Ormskirk, Lancashire L39 4QP, Tel. Ormskirk (0695) 75171 Extn. 294. (71431)

Roehampton Institute Digby Stuart Froebel Southlands Whitelands

Courses offered by the Institute lead to first and higher degrees of the University of Surrey and to other awards. The Institute seeks to make the following appointment with effect from 1st September 1986 or as soon as possible thereafter.

LECTURESHIP IN DRAMA

A well qualified and experienced person is required to join a team of ten full-time lecturers. Candidates should have a degree or higher degree in a relevant area with some level of practical experience and/or a teaching qualification.

Drama teaching at RIHE is well resourced and takes place in fully equipped studios within a supportive institution. A selective yearly intake of about 70 undergraduates read for combined honours degrees of the University of Surrey. The focus of the degree is on contemporary British and European Drama, with a strong emphasis on performance and creative work as a method of study. We are seeking an individual who can offer significant research experience whilst being able to teach drama through practical work. All lecturers are encouraged to maintain contact with relevant professional practice.

Salary (LII/SL) £8,076–£15,045 plus London Allowance £1,038 p.a.

For an application form and further particulars please WRITE to the Assistant Secretary, Roehampton Institute of Higher Education, Senate House, Roehampton Lane, London SW15 5PU. Closing date Friday 6th June 1986.

Roehampton Institute is an equal opportunity employer. (71440)

DERBYSHIRE COLLEGE OF HIGHER EDUCATION

Lecturer II/Senior Lecturer in Accountancy

A well qualified and experienced Accountant is required to contribute to the teaching of Financial Management, Taxation, Auditing or related specialisms.

Salary Scale:
Lecturer II £8,076–£12,945
Senior Lecturer £11,958–£14,046 (bar) £15,045

Application forms and further particulars from Staffing Officer, Derbyshire College of Higher Education, Kedleston Road, Derby DE3 1GB, telephone Derby (0332) 47181, extension 8 (71457)

Closing date: 6 June 1986. (90716) H12

Research and Studentships

University of Southampton
Department of Computer Studies

SERC CASE POSTGRADUATE STUDENTSHIP
An IKBS to support the feasibility of low cost programming languages

Applications are invited for a CASE studentship in association with the AI group at Praxis Electronic Systems Research Ltd. The successful candidate will undertake research leading to the investigation of an intelligent knowledge based system to diagnose compilation errors for programmers of various experience levels, using a new language called Ada.

Applicants should hold, or expect to obtain, First Class or Upper Second Class honours degree in Computer Science.

The successful applicant will register for the degree of Ph.D., and will receive the standard SERC grant plus £1,000 per annum.

Requests for further information and application forms should be addressed to Professor D.W. Barron, Department of Computer Studies, University of Southampton, Southampton SO9 5NH. Completed applications must be returned by 4 July 1986/PHEN. (90758) H12

Queen Mary College (University of London)
Dept. of Computer Science & Statistics

RESEARCH ASSOCIATE
Development of Task Analysis as a Design Tool

Applications are invited for this post, of research associate on this SERC funded project to investigate task analysis and task modelling as methods and tools to aid in system design and interface development. The post is tenable for three years.

Salary on scale £8,030 - £12,780 plus £1,267 London Allowance per annum.

Applicants should have a background in ergonomics, cognitive psychology, computer science or HCI. Further particulars obtainable from Dr Peter Johnson (Tel: 01-980 4811, Ext. 3924).

Applications (two copies) enclosing C.V. and names and addresses of two referees to be sent to the Assistant Personnel Officer, Queen Mary College, Mile End Road, London, E1 4NS. Please quote ref 86/45. Closing date 6 June 1986. (90753) H12

University of Leicester
Public Sector Economics Research Centre

RESEARCH ASSISTANT 1B
to work as a member of a team which is examining performance measurement in the public sector under the direction of Professor F.M. Jackson.

The appointment will be made on the Research Assistant 1 B Scale in the range of £7,025 - £8,505. The closing date will be end August 1986 and the project will run until June 1989.

Further details are available from Professor F.M. Jackson, Director, Public Sector Economics Research Centre, University of Leicester, Leicester LE1 7RH. (Tel: 0533 553755). The closing date 31st May 1986. (90709) H12

The London School of Economics and Political Science

RESEARCH OFFICER
Department of Economic History

Applications are invited for the post of Research Officer to work on a project on the economics of Fabrication and storage in Britain since 1900, funded by the Economic and Social Research Council, from 1 November 1986 until 31 October 1988. The ideal candidate should have research experience in an appropriate area of applied economics.

Appointment will be on the salary scale for Research Officers 1A in the range £8,030 - £9,495 plus £1,297 a year London Allowance, in accordance the starting salary, consideration will be given to qualifications, age and experience.

Application forms and further particulars are available on receipt of a stamped, addressed envelope from the Administrative Officer, Room 1B10, The London School of Economics, Houghton Street, London WC2A 2AE. Closing date for applications: 6 June 1986. (90726) H12

University of Bristol
School of Education

RESEARCH ASSOCIATE OR RESEARCH ASSISTANT PSYCHOLOGIST

Applications are invited for the post of Research Associate or Research Assistant to work with Dr. E. Robinson on an ESRC funded project on the development of children's understandings about verbal communication. Applicants should be psychology doctorates or graduates with experience of working with young children. The post is tenable for two years from 1st September 1986.

Salary, on Range 1A, will depend on qualifications and experience.

There is no application form. Applicants should send details of qualifications and experience, together with the names and addresses of two referees, to the Secretary, University of Bristol, School of Education, 35 Berkeley Square, Bristol BS8 1JA, from whom *further details* may be obtained. Closing date for applications: June 13th, 1986. H12

Oxford University
Clarendon Laboratory and Mathematical Institute

SENIOR RESEARCH ASSISTANTSHIP FOR NONLINEAR SYSTEMS PROJECT

Applications are invited for the post of Senior Research Assistant (RS1) to collaborate with Professor T. B. Benjamin, F.R.S., of the Mathematical Institute and Dr. T. Mullin of the Clarendon Laboratory on an inter-disciplinary research project concerning Nonlinear Systems. This project, for which extensive support is expected from the S.E.R.C., will amplify an established programme combining experimental and mathematical studies of fundamental and linear phenomena, largely but not exclusively in fluid dynamics.

The post will carry responsibilities for design and research applications of interfacing between experimental systems and computers (such as MICROVAX 2). It is expected that the major contribution will be made to the development of advanced software and hardware for novel methods of signal processing.

Applicants should have suitable qualifications of interest or Engineering, preferably with proven experience in the area of real-time data analysis and with a general interest in modern ideas about Chaos in Dynamical Systems. The appointment will be for four years from 1 October 1986 with salary, according to age and qualifications, in the range £11,700 to £15,700.

Applications, including full curriculum vitae and names of at least two referees, should be sent not later than 6 June to Professor T. B. Benjamin, Mathematical Institute, 24/29 St. Giles, Oxford OX1 3LB. H

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Research and Studentships

University of Newcastle upon Tyne
Transport Operations Research Group

CASE STUDENTSHIP
'The Effect of Deregulation on the Quality of Bus Services'

In cooperation with the Scottish Development Department the Transport Operations Research Group has secured a CASE studentship to conduct research into the effects of deregulation in the Quality of Bus Services. This work will be conducted in parallel with a major research study into the effects of deregulation in Scotland, being carried out by TORG on behalf of the SDD.

Candidates should possess or expect to obtain a good honours degree in a relevant discipline.

Further particulars are available from Mr. D.T. Silcock, Deputy Director, Transport Operations Research Group, The University, Claremont Tower, Claremont Road, Newcastle upon Tyne NE1 7RU.

Closing date: 6 June 1986. (90718) H12

The University of Sheffield
Department of Electronic and Electrical Engineering

POSTGRADUATE RESEARCH

Applications are invited from graduates, or students expecting to graduate, with a good Honours degree in pure or applied science to undertake research leading to M.Phil. or Ph.D. for which SERC studentship or other financial assistance may be available. The research would be in one of the following topics:- Solid State Devices and Materials, Microwave Systems and Instrumentation; Antennas and Propagation; Microelectronic and Microprocessor Systems; Electrical Machines and Drives; Image Processing; Medical Applications of Electronics; Computer-Aided Design and Computer Modelling; Molecular Electronics; Active Devices and Circuits.

Further details and application forms may be obtained from Dr. D. Howe, Department of Electronic and Electrical Engineering, The University, Mappin Street, Sheffield S1 3JD. (Tel: 0742 78555, Ext. 5046 or 5149). Closing date: 6 June 1986. (90739) H12

The University of Sheffield
Department of Electronic and Electrical Engineering

POSTGRADUATE RESEARCH

Applications are invited from graduates, or students expecting to graduate, with a good Honours degree in pure or applied science to undertake research leading to M.Phil. or Ph.D. for which SERC studentships or other financial assistance may be available. The research would be in one of the following topics:- Solid State Devices and Materials; Microwave Systems and Instrumentation; Antennas and Propagation; Microelectronic and Microprocessor Systems; Electrical Machines and Drives; Image Processing; Medical Applications of Electronics; Computer-Aided Design and Computer Modelling; Molecular Electronics; Active Devices and Circuits.

Further details and application forms may be obtained from Dr. D Howe, Department of Electronic and Electrical Engineering, The University, Mappin Street, Sheffield S1 3JD. (Tel: 0742 78555, Ext. 5046 or 5149). Closing date: 6 June 1986. (90739) H12

General Vacancies

CNAA

COUNCIL FOR NATIONAL ACADEMIC AWARDS

CHIEF OFFICER

Salary: negotiable around £35,000 p.a.

Council invites applications for this post which will become vacant when the present Chief Officer, Dr. Edwin Kerr, retires in July.

Council is seeking a man or woman of high calibre who will take the Executive role in leading CNAA through a most crucial new phase in its development.

The Chairman of Council, Sir Alastair Pilkington, would also welcome nominations of individuals whom it would be appropriate to invite to be candidates.

Salary: negotiable around £35,000 p.a.

Informal enquiries and requests for further particulars in confidence to:

The Secretary to Council, Mr. G. L. Middleton, CNAA, 344-354 Gray's Inn Road, London, WC1X 8BP. Telephone: 01-278 4411 Ext. 204

Applications by 6 June 1986.

Courses

THE OPEN UNIVERSITY

MA in Education

Applications are invited for a new part-time distance-taught modular course, leading to the award of the Open University degree of MA in Education.

The MA in Education is a professional postgraduate qualification designed particularly for those with experience in teaching, the advisory service, educational administration or an allied field. Students can select from a range of modules a programme to suit their background and professional goals. In 1987 modules on Educational Evaluation, Gender and Education and Classroom Studies will be presented. For subsequent years modules on Educational Organisations and Professionals, Language and Reading, Educational Management, Child Development, Education and Industry are planned.

The programme is open to applicants in any part of the United Kingdom. The teaching year will begin in February and finish with an examination in October. Teaching is by correspondence texts, optional day schools and tutorials, projects and assignments; a short residential school is also being planned.

The degree of MA in Education is awarded to students who have successfully completed three full credits of Open University postgraduate modules. Those with an Open University Advanced Diploma only need to study a further two postgraduate modules. Students will study one module only per year. In 1987, 100 places only will be offered on each module.

Applicants should normally have either a first or second class degree or its equivalent or an Open University Advanced Diploma.

For a prospectus and application form, please send a POSTCARD to the Higher Degrees Office, The Open University, P.O. Box 48, Milton Keynes, MK7 6AD, or telephone Milton Keynes (0908) 653231 or 653806. Please quote reference ME/3 The closing date for applications is 27th June 1986.

(72844)

Administration

The City University

ADMINISTRATIVE ASSISTANT IN THE UNIVERSITY SECRETARY'S OFFICE GRADE IA

Salary £8,358 to £14,077 per annum inclusive

The post is primarily concerned with the planning and allocation of space and the postholder will have an important role in resource planning. This will involve considerable contact with other Departments within the University, particularly with the Academic Registrar's Department and the Buildings Office.

Candidates should be articulate and numerate, have some familiarity and interest in computer systems and have some relevant experience.

The post will offer the successful candidate the opportunity to develop his/her administrative and managerial skills.

Benefits include season ticket loan scheme, generous holiday entitlement and excellent sports and recreational facilities.

For further information and an application form please write to Ms Jane Cameron, Personnel Recruitment Assistant, The City University, Northampton Square, London EC1V 0HB.

Closing date: 30th May 1986. (80724) H13

Queen Mary College (University of London)

DEPUTY FINANCIAL SECRETARY

Applications are invited from experienced qualified Accountants able to contribute to all aspects of sound financial management in this large and expanding College where the increasing importance of finance in the management of higher education makes this a key appointment.

Applicants should understand the use of computers in financial administration and be able to communicate effectively. Post qualification experience in the public sector preferably in higher education would be an added advantage.

Salary £20,307 on Administrative Grade IV.

Further details and application forms may be obtained from the Assistant Personnel Officer, Queen Mary College, Mile End Road, London E1 4NS to whom applications should be returned by 31 May 1986. Please quote reference 86/43/THES. (80744) H13

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Overseas

Posts Overseas

Yugoslavia

Six Lectors in English

Post 1: University of Maribor, School of Economics and Commerce
Post 2: University of Novi Sad
Post 3: Higher School of Pedagogy, Prizren
Post 4: University of Tuzla, Medical Faculty
Posts 5 and 6: University of Zagreb

Duties: to teach English language at intermediate and advanced levels; to set and mark internal examinations; to assist with the preparation of teaching materials. For posts 1 and 5 Business/Medical English is required.
Qualifications: degree, preferably in English, TEFL qualification and minimum of two years EFL teaching experience. Candidates should be British nationals and preferably single.
Salary: local salary according to post and a UK sterling subsidy of £4,626 per annum.
Benefits: air fares, baggage allowance, superannuation contribution and medical scheme.
Contract: one-year renewable local contract commencing 1 October 1986, guaranteed by the British Council.
Closing date for applications: 3 June 1986.
Reference: 86B 20 – 25 TH

Oman

Institute of Health Science, Directorate of Education and Training Ministry of Health, Ruwi

Post 1: Head of Radiography Department
Post 2: Head of Physiotherapy Department
Post 3: Head of Medical Laboratory Technology Department
Post 4: Senior ESP Teacher (Class I Grade IV)
Post 5: Senior ESP Teacher (Class I Grade III)
Post 6: ESP Teacher

Duties: Posts 1-3: to arrange the department, supervise all staff, ensure course standards and teaching methods are set and maintained; to plan and implement curricula for appropriate courses, to supervise the timetable of theoretical and practical training and teach students and staff as required; to develop examination and assessment tools; to prepare teaching materials, identify equipment and books. Posts 4 – 6: to teach English as a Foreign Language and English for Specific Purposes to students, false beginners to intermediate level, teaching hours 15 to 18 per week; to produce materials and tests to evaluate progress; routine administration. Posts 4 – 5: additionally to design courses and produce materials in discussion with Head of Department; liaison with other departments over training needs.
Qualifications: Post 1: B.Sc in Radiography or equivalent plus one-year certificate or diploma in teaching plus 12 years experience in teaching and Radiography. Post 2: B.Sc in Physiotherapy or equivalent plus one-year certificate or diploma plus 12 years experience in teaching and Physiotherapy. Post 3: B.Sc in Medical Laboratory Science or its equivalent plus Membership or Fellowship in a specialist field after 2 years training and practice, plus Masters degree after 3 years training, plus 8 years experience in teaching and Medical Laboratory Science
OR
B.Sc Med. Lab. Science plus Masters degree in appropriate science after 2 years training plus 8 years teaching experience
OR
B.Sc Med. Lab. Science plus Membership/Fellowship after 2 years experience plus 11 years teaching experience
OR
B.Sc Med. Lab. Science, certificate/diploma plus 12 years teaching experience.
Post 4: University degree in Arts or Science plus appropriate post-graduate qualification in Linguistics or in EFL of not less than one year's duration plus 9 years experience in teaching of EFL or ESP after the first University qualification
OR
University degree in Arts or Science plus 10 years experience in EFL or ESP teaching after the first University qualification.
Post 5: Class I Grade III University degree in Arts or Science plus appropriate post-graduate qualifications in Linguistics or teaching of EFL plus 12 years experience in the teaching of EFL or ESP in English after the first University qualification,
OR
University degree in Arts or Science plus RSA certificate of not less than one year's duration plus 12 years experience in the teaching of EFL or ESP after the first University qualification.
OR
University degree in Arts or Science plus Diploma in EFL plus 12 years experience in the teaching of EFL after the first University qualification.
Post 6: University degree in Arts or Science plus appropriate post-graduate qualification in Linguistics or EFL teaching of not less than one year's duration plus 7 years experience in teaching of EFL or ESP after the first University qualification,
OR
University degree in Arts or Science plus 8 years experience in EFL or ESP teaching after the first University qualification.
Posts 4 – 6: overseas experience with ESP materials production in medicine, science or technology preferred.
Age range: posts 1 – 5, 35 – 50 years; post 6, 26 – 50 years.
All Posts: essential: British candidates with driving licence. Preferred: British qualifications; single or married candidates with up to two children.
Salary: Posts 1-3: RO 9,444 to RO 11,772 per annum; Post 4: RO 5,376 to RO 6,960 per annum; Post 5: RO 5,004 to RO 7,944 per annum; Post 6: RO 4,944 to RO 6,528 per annum (£1 = RO 0.59 approx).
Benefits: Rent free accommodation, utilities and transport allowance, one month's salary for each completed year after 2 years service, free medical treatment. Fares paid annually for self, wife and up to 2 children; luggage allowance.
Contract: 1 year local, renewable by mutual agreement, guaranteed by the British Council, commencing 1 September 1986.
Closing date for applications: 27 May 1986. Telephone 01-499 8011 ext. 3332 for application forms, quoting Reference: 86 A 5 – 10 TH

For further details and an application form, please write, quoting the post reference number, to: Overseas Educational Appointments Department, The British Council, 65 Davies Street, London W1Y 2AA.

The British Council

REMINDER
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23RD MAY '86

Overseas continued

Phillip
Institute of Technology.

Melbourne, Australia
School of Physical Education & Leisure Studies

Head of Leisure Studies Department

Phillip Institute of Technology is a multi-disciplinary College of Advanced Education situated in the northern area of Melbourne, Victoria.

The Department of Leisure Studies is one of the three autonomous departments (Physical Education, Leisure Studies and Anatomy & Physiology) associated with the School of Physical Education and Leisure Studies.

This position is classified at Principal Lecturer level and applicants must possess an appropriate higher degree, have extensive experience in teaching at tertiary level and a background of sound academic and administrative leadership.

Salary: $A44,541 per annum.

The Institute has assistance schemes covering relocation expenses, superannuation and assistance with accommodation.

Further information, including job description and application form, may be obtained from the Personnel Department.

Written applications, quoting Ref. No. P02-001, should be forwarded together with curriculum vitae and transcripts, and the names and addresses of three referees to the Personnel Manager, Phillip Institute of Technology, Plenty Road, Bundoora, Melbourne, Vic., Australia, 3083, by the closing date of 18 July 1986.

RMIT
1887 – 1987

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FACULTY OF ENGINEERING
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Applicants would be expected to possess a PhD with a strong research background in materials science and a proven ability to manage and co-ordinate advanced research and development projects.

The position is for a five-year term with extension contingent on funding and the success of the programme. Further enquiries should be directed to Dr. Jim Williams, Director MTC on (613) 660 2459 or telex AA38406. Applications close: July 11, 1986.

Salary A$46,355 p.a. Reference: 115/08/AS

A Position Description should be obtained from Personnel Services by phoning (613) 660 2337 or telex AA38406. Written applications, providing sufficient information to indicate suitability for interview, should be addressed to Senior Appointments Officer:

Royal Melbourne Institute of Technology Limited
GPO Box 2476V, Melbourne 3001
Australia.

(71484)

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Connecticut, USA
Department of History

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Candidates will be interviewed at the meeting of the African Studies Association in Madison, Wisconsin from October 30 to November 2, 1986 and must submit their complete dossiers including letters of recommendation by October 6, 1986 to E. Y. Brodkin, Chair, Department of History, Connecticut College, New London, CT 06320 USA. Connecticut College is an equal opportunity employer and encourages minority candidates and women to apply. (80688) H14

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Inside

The dogs that sometimes bark. In the second of a two-part feature on **PUBLIC SCRUTINY**, David Jobbins looks at the monitoring of public spending and policy (page 10)

The Essex sausage and the Loughborough chessboard: Patrick Nuttgens concludes our series on **ACADEMIC ARCHITECTURE** with a consideration of the concrete fruits of the Robbins years, the plum architectural commissions of the 1960s (page 13)

Although reliable information about the **CHERNOBYL** nuclear accident is still hard to come by, some conclusions are already possible. Three experts in widely different fields – radiation physics, environmental risk, Soviet politics – look at some of the implications of the incident (pages 14–15)

Go to jail, move directly to jail. Robert Reiner reviews three new studies of **PENAL IMPRISONMENT**. Are our prisons – as Churchill claimed in 1910 – measures of "the stored-up strength" of the nation, "proof of the living virtue in it"? (page 16)

In a special section on **ECONOMICS BOOKS**, we review new work on the British economy, Milton Friedman's thought, multinationals, the New Deal, protectionism, and others (pages 20–25)

Home news	1–7
Patrick Nuttgens	2
Letters to the editor	2
Don's Diary (Frankie Todd)	4
Antithesis	5
Overseas news	8–9
Articles	10–15
Noticeboard	12
Column (Harold Silver)	14
Books	16–25
Economics books	20–25
Classified advertising	26–35

NEXT WEEK

The future of space science
Biological sciences books
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TIMES PAST

THE TIMES

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Turning the clock back

Teacher training's awkward straddle across the binary line, a postgraduate part in universities and both postgraduate and undergraduate courses in polytechnics and colleges, was always likely to cause trouble. Now it has. The Department of Education and Science, on the prompting of HM Inspectors and the Council for the Accreditation of Teacher Education (CATE), has proposed that Bachelor of Education students in some smaller colleges should have to spend a year in a university. So BEd students at Charlotte Mason in Cumbria will spend a year at Lancaster, North Riding students will go to Leeds, and so on.

The objections to this DES proposal are that the clock would be turned back to the early 1960s when colleges of education were under the academic tutelage of universities; that it would make it more difficult again for these colleges to diversify into subjects adjacent to teacher education; that their academic planning would be dominated by this new association with their "big brother" universities rather than being guided by broader priorities determined by the National Advisory Body; and that the plan's detailed implementation in terms of staffing, timetabling, and cash looks difficult if not impossible.

The advantages are that it would allow colleges of acknowledged quality but arguable viability to survive and even thrive within the larger academic association that this planned university link provided, and that subject teaching within their BEds could be strengthened by involving university teachers. The first of these is particularly important for the DES, which wishes to minimize the need for politically controversial college closures especially now that it has accused the NAB of alarmism for proposing a 9,500 cut in next year's student intake. The present plan looks like a bold experiment in rationalization, even if it isn't. The second is a particular concern of the CATE. Its members, and their inspectorial advisers, believe that many BEds contain too much soft-centred pedagogy and need stiffening with a tougher academic backbone.

However the objections to the DES plan are real while its advantages prove on careful examination to be less substantial. Clearly to subordinate teacher training in the public sector to the universities would disrupt the orderly planning of that sector, even if only a handful of small colleges were involved. Of course if the plan were to integrate these colleges into their parent universities properly that would be a different question. The difficulty with the present proposal is that it offers the worst of all worlds; the colleges would remain subordinate to their universities and be denied an association on terms of genuine equality, but would be divorced from the development of the public sector.

The charge that the new arrangement would reintroduce the academic tutelage from which the colleges of education escaped in the 1960s cannot be dismissed as the politics of binary envy. After all 20 years ago the colleges taught the non-graduate certificate of education and produced primary and secondary modern school teachers, while the universities "topped up" graduates in conventional academic subjects with a one-year postgraduate course so that they could go out and teach in grammar schools. The pattern of teacher training reflected the pattern of schools. Today that pattern has changed. It is not going to change back. But there is a strong whiff of reactionary longing in the DES plan.

On the other hand the plan's presumed advantages rest on some highly problematical assumptions. In what way would the academic and logistical viability of Charlotte Mason or North Riding be increased by the fact that their students spent their second years at Lancaster or Leeds? At the level of superficial politics it may sound good. But a strong argument can be made that such an association in practice would have the opposite effect. Academically the colleges might be impoverished by the transfer of the main responsibility for subject teaching to the universities, while the emigration of second-year students could produce staffing and other resource imbalances that might be difficult to correct.

Nor is it clear that a year in a university academic department would provide the subject teaching appropriate for a BEd. After all very few universities offer the BEd so they can have little experience of its requirements. It also seems unlikely that the college students would be able to follow the same course as the university's own students on single honours degrees. Presumably the ordinary university course would need to be adapted or chopped into modules. But even if this were not necessary, surely it must be doubtful whether the intellectual ethos of an academic degree is appropriate for students pursuing a professional qualification. Already teacher training is criticized for its alleged lack of professional practicality.

This is not the way forward. Teacher education must be planned and provided as an integral part of higher education. This means that it must be passed back to the NAB whatever offence that may cause to the DES's or the inspectors' pride. For its part the NAB must accept the need for tough-minded rationalization to produce a more coherent pattern of teacher education. There are still too many academically isolated units that do not make the most efficient use of resources. The incorporation of such units in larger institutions cannot be avoided. Of course there is no need for a public sector monopoly. Mergers with universities too should be encouraged provided the universities are prepared for total amalgamation and abandon the demeaning arm's length paraphernalia of "collegiate" degrees and the rest.

No one doubts the need to raise standards in teacher education. The argument is about the best way to do this. The present plan would probably compound its endemic weakness because it would tend to sharpen the dichotomy between professional and academic aspects of teacher education. By handing over subject teaching to universities the academic weakness of the colleges would be emphasized and the standards of the professional element with which they would be left called into question. What is needed is a secure integration between academic and professional elements, not the elevation of one at the expense of the other. In the end there is no alternative to providing teacher education in large multi-faculty institutions – universities (if it is part of the mainstream and not a satellite), polytechnics, and large colleges of higher education with a diversity of advanced courses. The days of independent teacher education should be over. The trouble with the DES's approach is that it is likely to prolong this profitless independence.

A sharper focus overseas

The spectacle of 41 universities, 16 polytechnics and 33 colleges represented in a single hall vying for the attention of overseas students would have been unthinkable a decade ago. The fact that such an event could take place last week in Malaysia under the guise of British Education Week without a welter of allegations of higher education prostituting itself shows just how times have changed. It has become accepted that institutions have to go out in search of valuable business and that this can be done without offence if the operation is properly organized.

Increasingly, universities and some public sector institutions are getting their act together, realizing that the recruitment of overseas students is too important to be left to chance. Many now have full-time posts responsible for both the recruitment and care of overseas students, and the the professionalism that was evident in Kuala Lumpur in simple but important areas such as stand designs and promotional literature shows that considerable time and expertise is going into the new ventures.

It was not ever thus – and, indeed, is not still in some places. There are universities which, by giving individual departments a large share of the fees from any foreign students they recruit, tacitly encourage the kind of uncoordinated, freelance activity which has given British higher education a bad name on occasion. There have been instances of several representatives of different departments from the same university in the same city at the same time, not knowing of each other's presence.

A number of universities also continue to retain agents abroad, over whose activities they have little or no control, even in countries where they are already paying for the services of the Educational Counselling Service run by the British Council. And the absence of co-ordination spreads into the Government's ranks, too, with the British Overseas Trade Board sponsoring training missions which sometimes cut across other initiatives and which have been known to promote educational institutions which are not even offering British qualifications. The whole area cries out for a body which will let the left hand know what the right is doing; not a new tier of bureaucracy, but a focal point.

The ECS offers just such an opportunity, if only it could achieve some stability itself. The trouble is that, as a newish venture itself, it is still to gain the full confidence of the universities and is living from hand to mouth. Although almost all the universities and polytechnics are now paying their £5,000 a year, there are constant murmurs of dissatisfaction from some of those receiving small numbers of students through the scheme and no certainty from one year to the next how many subscribers there will be.

Numbers are already artificially depressed by the universities' refusal to accept the colleges as members. A review of the ECS is under way within the British Council, with the expectation that the number of countries in which the service operates will be increased, perhaps as an optional extra at first for those prepared to pay more. But this is no way to run something as important to Britain, both in terms of finance and image abroad. There may be no accurate assessment of the value of overseas students to the British economy, but any businessman abroad will confirm that it is considerable. Sir Kenneth Berrill, who has tried to make a dispassionate, realistic estimate, makes the annual figure at least £750 million. Yet the ECS gets only £100,000 from the so-called Pym package of Government support.

Britain's share of the overseas student market is recovering, but it is nowhere near the point it had reached before the introduction of full-cost fees. At the same time, the United States, Australia and Japan are all stepping up their efforts to recruit in an increasingly competitive situation, all enjoying considerable government support. A relatively tiny amount of public money would secure the future of the ECS and go a long way towards ensuring that the number of fee-paying students coming to Britain continues to rise.

If the service, or some alternative, is not given the central backing it needs to establish itself properly, the full potential for attracting a well-balanced, highly-qualified overseas student population to Britain may never be realized. Already, freelance operators are trying to mount large-scale recruiting missions to countries such as China, where such an approach is widely held to be unsuitable. It would be unfortunate, to say the least, if the good work which has gone into restoring Britain's tarnished image abroad was undone now.

Laurie Taylor

Average age of academics continues to rise. ***THES*****, May 2**

Happy birthday, Doctor Quintock.
Er, thank you, Maureen.

It is today, isn't it?
Oh yes. I'm afraid so. Forty-five very average years.

Hardly average, Doctor Quintock. You're a very distinguished person. I was only reading the other day . . .
No, Maureen. You misunderstand me. Not that kind of average. Average *age*. Forty-five is the average age in this department.

I don't see how that . . .
And in the university, Maureen. Forty-five is the average age in the university.

But that doesn't mean that . . .
And in all the universities in this country put together, Maureen. Forty-five is now the average age for all the university teachers in the country.

It's only a statistical thingy. It doesn't . . .
And listen, Maureen. Listen to this. Ten years ago. Ten whole years ago. In 1976. The year of Entebbe and Callaghan and Fred Mulley. Yes, Fred Mulley. Ten years ago. I was the average age as well.

That was hardly your . . .
And 18 years ago, Maureen. Back in 1968. Well before your time. Danny Cohn-Bendit. The Sorbonne. Ted Short. Yes, Ted Short. The very year I started here. The youngest person in the department. *But still I was the average age.*

You mustn't blame . . .
And what's more, Maureen. What's more. In 2001. *Space Odyssey* year, Maureen. *Also Sprach Zarathustra*. When I'm 60. Will I be merely 60? My own personal 60? No, I will not. I will still be the average age. *An average 60.*

But, Doctor Quintock. There'll still be some consolation.
What? Where?

Well . . . you'll still be the youngest person in the department.

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